

State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
Engineering Division
Honolulu, Hawaii 96813

May 25, 2012

Board of Land and Natural Resources
State of Hawaii
Honolulu, Hawaii

**REQUEST APPROVAL OF UPDATES TO THE INVENTORY OF DAMS
FOR THE STATE OF HAWAII BY ADDING
MA-0134 KAOPALA BASIN, KA-0135 HANAMAULU FIELD 21 RESERVOIR
HA-0136 WAIKOLOA RESERVOIR NO. 3, OA-0137 OAHU RESERVOIR 155
MA-0138 KAHAKAPAO RESERVOIRS, MA-0139 MAUI FIELD 290 RESERVOIR
MA-0141 KEHALANI OFFSITE RETENTION BASIN,
MA-0142 MIDDLE FIELD 14 RESERVOIR
MA-0143 KAILI ILI RESERVOIR, MA-0144 MAHINAHINA RESERVOIR
MA-0140 UKUMEHAME RESERVOIRS, KA-0145 KAUAI LAGOONS
KA-0146 HALAULA RESERVOIR, HA-0147 PUNAWAI RESERVOIR
OA-0148 HELEMANO 11 RESERVOIR, OA-0149 MAUNAOLU RESERVOIR
MA-0150 WAILUKU WATER RESERVOIR 6,
MA-0151 WAILUKU WATER RESERVOIR 10
AND MA-0152 WAIKAMOI RESERVOIRS
AND REMOVING
HA-0026 LALAKEA RESERVOIR, HA-0027 E-13 RESERVOIR
KA-0028 PUU KA ELE RESERVOIR, HA-0052 KEHENA RESERVOIR AND
OA-0148 HELEMANO 11 RESERVOIR
AND AUTHORIZE THE CHAIRPERSON TO APPROVE ADDITIONS AND/OR
REMOVALS OF DAMS TO THE INVENTORY OF DAMS FOR THE STATE OF
HAWAII FOR FUTURE CHANGES TO THE INVENTORY**

The Engineering Division (Division) hereby submits for your approval an update of dams on the inventory of dams for the State of Hawaii, pursuant to Hawaii Revised Statutes (HRS) Chapter 179D.

AUTHORITY:

HRS Chapter 179D & Hawaii Administrative Rule (HAR) Chapter 190.1

HRS Section 179D-6, "General powers and duties of the board of land and natural resources", Item (b)(13), "Catalog and maintain an inventory of all regulated dams and reservoirs in the State pursuant to this chapter without regard to chapter 91."

HRS Section 179D-3, "Definitions"

"Dam" means any artificial barrier, including appurtenant works that impounds or diverts water and that:

- (1) Is twenty-five feet or more in height from the natural bed of the stream or watercourse measured at the downstream toe of the barrier, or from the lowest elevation of the outside limit of the barrier if it is not across a stream channel or watercourse to a maximum water storage elevation;
- (2) Has an impounding capacity at maximum water storage elevation of fifty acre-feet or more. This chapter shall not apply to any artificial barrier that is less than six feet in height regardless of storage capacity or that has a storage capacity at maximum water storage elevation less than fifteen acre-feet regardless of height; or
- (3) Meets additional criteria or is specifically exempt as determined pursuant to rules adopted by the board.

HAR Section 13-190.1-2 Definitions.

“Dam” means any artificial barrier, including appurtenant works, which impounds or diverts water and:

- (1) Is twenty-five feet or more in height from the natural bed of the stream or watercourse measured at the downstream toe of the barrier, or from the lowest elevation of the outside limit of the barrier if it is not across a stream channel or watercourse, to a maximum water storage elevation;
- (2) Has an impounding capacity at maximum water storage elevation of fifty acre-feet or more. This chapter shall not apply to any artificial barrier which is less than six feet in height regardless of storage capacity or which has a storage capacity at maximum water storage elevation less than fifteen acre-feet regardless of height;
- (3) Was included in circular C 122 (Revised) entitled “Dams within the jurisdiction of the State of Hawaii” dated September 1998;
- (4) Any facility that has two or more reservoirs that operate or function as a single facility or are connected together with an uncontrolled conduit, which shall be construed to be one dam or reservoir. The highest height of any of the embankments and the combined maximum storage volume shall be used as the criteria for determining if the structure is a dam under this chapter; or
- (5) Is a natural structure that retains water and has been altered by the addition of an outlet works and has a maximum storage volume greater than fifty acre-feet.

HAR Section 13-190.1-3 Exempt structures.

Structures exempt from these rules include:

- (1) Highways and roadfills (except those designed or modified with the purpose of impounding water for uses other than flood detention);
- (2) Refuse embankments (e.g., solid waste disposal facilities); and
- (3) Structures that store water only below the lowest point of the natural ground, unless an outlet works is constructed to develop water.

BACKGROUND:

As authorized under HRS Chapter 179D, the Board of Land and Natural Resources (BLNR) has the power to regulate dams and reservoirs that meet the jurisdictional criteria. The jurisdictional criteria is clarified in the Hawaii Administrative Rules (HAR) Chapter 13-190.1, effective February 20, 2012. Since the September 1998 update for Circular C122, referenced in HAR Chapter 190.1, a number of dams have been added/removed to/from the inventory as described below:

The following dams were added to the Hawaii Regulated Dam Inventory:

ADDED PRIOR TO 2006:

<u>Dam ID & Name</u>	<u>Hazard Classification/Comment</u>
MA-0134 Kaopala Basin	High Hazard (constructed 1998)
KA-0135 Hanamaulu Field 21 Reservoir	High Hazard (constructed 1930)
HA-0136 Waikoloa Reservoir No. 3	High Hazard (constructed 1985)
OA-0137 Oahu Reservoir 155	High Hazard (constructed 1916)
MA-0138 Kahakapao Reservoirs	High Hazard (constructed 1990)
MA-0139 Maui Field 290 Reservoir	High Hazard (constructed 1997)
MA-0141 Kehalani Offsite Retention Basin	High Hazard (under construction)
MA-0142 Middle Field 14 Reservoir	High Hazard (constructed 2006)
MA-0143 Kaili Ili Reservoir	High Hazard (constructed 1984)
MA-0144 Mahinahina Reservoir	High Hazard (constructed 1995)

ADDED AFTER 2006:

<u>Dam ID & Name</u>	<u>Hazard Classification/Comment</u>
MA-0140 Ukumehame Reservoirs	High Hazard (constructed in plantation era)
KA-0145 Kauai Lagoons	High Hazard (constructed 1987)
KA-0146 Halaula Reservoir	High Hazard (constructed in plantation era)
HA-0147 Punawai Reservoir	Undetermined (modified 2006)
OA-0148 Helemano 11 Reservoir	High Hazard (constructed in plantation era)
OA-0149 Maunaolu Reservoir	High Hazard (constructed 1966)
MA-0150 Wailuku Water Reservoir 6	High Hazard (modified 2006)
MA-0151 Wailuku Water Reservoir 10	High Hazard (constructed in plantation era)
MA-0152 Waikamoi Reservoirs	Undetermined (constructed 1960)

The following dams were removed from the Hawaii Regulated Dam Inventory:

<u>Dam ID & Name</u>	<u>Dam Safety Permit #/Comment</u>
HA-0026 Lalakea Reservoir	Permit #31 Dam Removed (2009)
HA-0027 E-13 Reservoir	Permit #35 Verified Below Regulatory Size
KA-0028 Puu Ka Ele Reservoir	Permit #21 Dam Removed (2010)
HA-0052 Kehena Reservoir	Permit #57 Dam Removed (2011)
OA-0148 Helemano 11 Reservoir	Permit #45 Dam Removed (2011)

Upon approval of this update, the Dam Safety Program will have 140 regulated dams in the current inventory.

DISCUSSION:

Since the new Dam and Reservoir Act of 2007 went into effect, the Division has been verifying, identifying, inspecting and assessing existing dams statewide as well as reviewing various modifications and removals to dams on our regulatory listing. During this interim period, the Division has informally made modifications to the regulated dam inventory listing to add dams that meet the jurisdictional criteria, as well as remove those that no longer meet the jurisdictional criteria. The Division would like to formally update these revisions to the regulatory inventory of dams. Impacted owners of these facilities have been notified of these determinations.

HRS CHAPTER 343 – ENVIRONMENTAL ASSESSMENT:


These inventory updates do not trigger any HRS Chapter 343 actions.

RECOMMENDATION:

That the Board:

1. Approve the indicated updates to the inventory of dams for the State of Hawaii; and
2. Authorize the Chairperson to approve additions and/or removals of dams to the inventory of dams for the State of Hawaii for future changes to the inventory, pursuant to the criteria set forth under HRS Section 179D-6 and HAR Sections 13-190.1-2 and 13-190.1-3 and direct the Department to provide an annual update to the Board on the dams that have been added/removed.

Respectfully submitted,



GARY S. CHANG
Chief Engineer

APPROVED FOR SUBMITTAL:



WILLIAM J. AILA, JR.
Chairperson

- Exhibits:
- 1 Excerpts from the "Dams within the Jurisdiction of the State of Hawaii"
1988 Circular C-122
 - 2 Hawaii Regulated Dam Inventory – April 2012 Circular C-122 (Revised)
 - 3 Hawaii Revised Statutes (HRS) Chapter 179D
 - 4 Hawaii Administrative Rules (HAR) Chapter 13-190.1.

**DAMS WITHIN THE JURISDICTION OF THE
STATE OF HAWAII**

**Circular C122
(Revised)**



**STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
ENGINEERING BRANCH**

Exhibit 1

DAMS
Within the Jurisdiction
of the
State of Hawaii

Circular C122
(Revised)

Prepared by

State of Hawaii
Department of Land and Natural Resources



In Cooperation With
Association of State Dam Safety Officials
and
Federal Emergency Management Agency



Honolulu, Hawaii
September 1998



BENJAMIN J. CAYETANO

Governor

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FOREWORD

In the State of Hawaii, there are more than 100 earth embankment dams that are subject to the State's Dam Safety Program. This publication catalogs a listing of dams that fall within the jurisdiction of the State of Hawaii.

Dams listed in this publication are identified as having artificial barriers, together with appurtenant works, which are 25 (twenty five) feet or more in height or have an impounding capacity of 50 (fifty) acre-feet or more. Dams less than 6 (six) feet in height, regardless of storage capacity, or that have a storage capacity not in excess of 15 (fifteen) acre-feet regardless of height do not fall under State jurisdiction.

The Dam Safety Act of 1986 encourage each state to establish and maintain a State Dam Safety Program to assure protection of human life and property.

Hawaii Dam Safety Act of 1987, Chapter 179D "Dams and Reservoirs" of Hawaii Revised Statutes, and Chapter 13-190 "Dams and Reservoirs" of Hawaii Administrative Rules established rules governing the design, construction, operation, maintenance, enlargement, alteration, repair, and removal of dams, reservoirs, and appurtenant works in the State of Hawaii.

The Department of Land and Natural Resources reviews plans and specs for the construction of new dams or for the enlargement, alteration, repair, or removal of existing dams and must grant written approval before the owner can proceed with construction.

Professional engineers and geologists from the Department evaluate each project, investigate proposed sites, and check available construction materials. During construction, they identify conditions disclosed during site development which may require design changes; they check for compliance with approved plans and specs; and they approve foundations before material is placed.

The Department must approve the construction based upon the findings of its personnel before any water can be impounded behind a new dam or behind an existing dam which has been enlarged, altered, or repaired. The approval may contain conditions and may be amended or revoked by the Department.

Operating dams are periodically inspected to ensure that they are adequately maintained and to direct the owner to correct any deficiencies found.

The Department conducts investigations of selected dams which include a comprehensive review of all pertinent material contained in the Department files, a visual project inspection, technical studies when necessary and preparation a comprehensive report.

Information in this publication was obtained from the U.S. Army Corps of Engineers Inventory of Existing Dams. Current information was obtained from dam owners and entered to update the information. New dams were entered from applications and plans submitted by owners and from surveys and supplementary information acquired during inspection and special studies.

The Department welcomes suggestions for additions and improvements from users of the publication. Comments may be address to the Engineering Branch, Land Division, Department of Land and Natural Resources, P.O. Box 373, Honolulu, Hawaii 96809.

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CLASSIFICATION OF DAMS

Dam are classified in accordance with size and hazard potential in order to formulate a priority basis for selecting dams to be included in the inspection program and also to provide compatibility between guideline requirements and involved risks. When possible the initial classifications should be based upon information listed in the National Inventory of Dam with respect to size, impoundment capacity and hazard potential. It may be necessary to reclassify dams when additional information becomes available.

SIZE. The classification for size is based on the height of the dam and storage capacity in accordance with Table 1. The height of the dam is established with respect to the maximum storage potential measured from the natural bed of the stream or watercourse at the downstream toe of the barrier, or of it is not across a stream or watercourse, the height from the lowest elevation of the outside limit of the barrier, to the maximum water storage elevation. For the purpose of determining project size, the maximum storage elevation may be considered equal to the top of the dam elevation. Size classification may be determined by either storage or height, whichever gives the larger size category.

Table 1. SIZE CLASSIFICATION

Category	Storage (acre-ft)	Height (ft)
Small	< 1,000 and \geq 50	< 40 and \geq 25
Intermediate	\geq 1,000 and < 50,000	\geq 40 and < 100
Large	\geq 50,000	\geq 100

HAZARD POTENTIAL. The classification for potential hazard should be in accordance with Table 2. The hazard pertain to potential loss of human life or property damage in the area downstream of the dam in event of failure or mis-operation of the dam or appurtenant facilities. Dams conforming to criteria for the low hazard potential category generally will be located in rural or agricultural areas where failures may damage farm buildings, limited agricultural land, or township and county roads. Significant hazard potential category structures will be located in predominantly rural or agricultural areas where failure may damage isolated homes, secondary highways or minor railroads or cause interruption of use or service of relatively important public utilities. Dams in the highest hazard potential category will be those located where failure may cause serious damage to homes, extensive agricultural, industrial and commercial facilities, important public utilities, main highways, or railroads.

Table 2. HAZARD POTENTIAL CLASSIFICATION

Category	Loss of life	Property Damage
Low	None expected (no permanent structures for human habitation)	Minimal (undeveloped to occasional structures or agriculture)
Significant	Few (no urban developments and no more than a small number of structures)	Appreciable (notable agriculture, industry or inhabitable structures)
High	More than few	Excessive (extensive community, industry or agriculture)

Table 3. HAZARD CLASSIFICATION OF DAMS IN HAWAII

	Hawaii	Honolulu	Kauai	Maui	(Subtotal)
High	5	6	21	21	53
Significant	1	8	6	0	15
Low	1	0	14	4	19
Unknown	5	1	11	22	39
(Subtotal)	12	15	52	47	(Total) 126

INDEX BY DAM NATIONAL INVENTORY ID

<u>NAT ID</u>	<u>DAM NAME</u>	<u>COUNTY</u>	<u>OWNER NAME</u>		<u>PAGE NO.</u>
H100001	NUUANU DAM NO. 4	HONOLULU	HONOLULU BOARD OF WATER	H	O-6
H100002	PUU LUA RESERVOIR	KAUAI	KEKAHA SUGAR CO	L	K-42
H100003	PUU OPAE RESERVOIR	KAUAI	KEKAHA SUGAR CO	L	K-44
H100004	KITANO RESERVOIR	KAUAI	KEKAHA SUGAR CO	L	K-25
H100005	MANA RESERVOIR	KAUAI	KEKAHA SUGAR CO	L	K-30
H100006	WAIKAIA RESERVOIR	KAUAI	GAY AND ROBINSON	S	K-49
H100007	KEPANI RESERVOIR	KAUAI	GAY AND ROBINSON	U	K-24
H100008	WAIKOLOI RESERVOIR	KAUAI	GAY AND ROBINSON	S	K-50
H100009	KAAMANUI RESERVOIR	KAUAI	GAY AND ROBINSON	H	K-18
H100010	WAIKALUA RESERVOIR	KAUAI	MARY N. LUCAS ESTATE	L	K-48
H100011	AII RESERVOIR	KAUAI	LIHUE PLANTATION CO	L	K-7
H100012	KAPAIA RESERVOIR	KAUAI	LIHUE PLANTATION CO	L	K-22
H100013	UPPER KAPAHU RESERVOIR	KAUAI	STATE	S	K-47
H100014	OKINAWA RESERVOIR	KAUAI	LIHUE PLANTATION CO	H	K-36
H100015	KANEHA RESERVOIR	KAUAI	LIHUE PLANTATION CO	S	K-20
H100016	MIMINO RESERVOIR	KAUAI	LIHUE PLANTATION CO	S	K-34
H100017	WAHIAWA DAM	HONOLULU	WAIALUA SUGAR CO	H	O-14
H100018	OPAEULA 1 RESERVOIR	HONOLULU	WAIALUA SUGAR CO	S	O-7
H100019	OPAEULA 2 RESERVOIR	HONOLULU	WAIALUA SUGAR CO	S	O-8
H100020	OPAEULA 15 RESERVOIR	HONOLULU	WAIALUA SUGAR CO	S	O-9
H100021	KEMOO 5 RESERVOIR	HONOLULU	DOLE FOOD CO HAWAII	S	O-4
H100022	UPPER HALEMANO RESERVOIR	HONOLULU	DOLE FOOD CO HAWAII	S	O-13
H100023	HALEMANO 6 RESERVOIR	HONOLULU	DOLE FOOD CO HAWAII	S	O-1
H100024	KALIHUAI RESERVOIR	KAUAI	KILAUEA AGRONOMICS	S	K-19
H100025	KU TREE RESERVOIR	HONOLULU	U.S.A. - DOD	H	O-5
H100026	LALAKEA RESERVOIR	HAWAII	BISHOP ESTATE (HAWAII)	H	H-9
H100027	E - 13 RESERVOIR	HAWAII	BISHOP ESTATE (HAWAII)	L	H-4
H100028	PUU KA ELE RESERVOIR	KAUAI	MARY N. LUCAS ESTATE	H	K-41
H100029	MORITA RESERVOIR	KAUAI	MARY N. LUCAS ESTATE	L	K-35
H100030	KOLOKO RESERVOIR	KAUAI	MARY N. LUCAS ESTATE	L	K-26
H100037	RESERVOIR 510	HONOLULU	BISHOP ESTATE	S	O-10
H100038	RESERVOIR 530	HONOLULU	BISHOP ESTATE	H	O-11
H100039	RESERVOIR 545A	HONOLULU	BISHOP ESTATE	H	O-12
H100040	50 MG WAIKOLOA RESERVOIR	HAWAII	HAWAII COUNTY - WATER DEPT	H	H-1
H100041	KUALAPUU RESERVOIR	MAUI	STATE - DOA	H	M-14
H100042	60 MG WAIMEA RESERVOIR	HAWAII	STATE - DOA	U	H-3
H100043	PUUKAPU WATERSHED RETARDING DAM	HAWAII	STATE - DLNR	H	H-12
H100044	AHUKINI RESERVOIR	KAUAI	LIHUE PLANTATION CO	U	K-6
H100045	HALEMANO 16 RESERVOIR	HONOLULU	DOLE FOOD CO HAWAII	U	O-2
H100046	WAIKAMOI DAM NO. 2	MAUI	MAUI COUNTY	U	M-47
H100047	50 MG PIIHOLO RESERVOIR	MAUI	MAUI COUNTY- DPW	U	M-1
H100048	OLINDA RESERVOIR	MAUI	MAUI COUNTY- DPW	H	M-17
H100049	KEAIIWA RESERVOIR	HAWAII	KAU SUGAR CO	U	H-7
H100050	HAWI NO. 3 RESERVOIR	HAWAII	KOHALA SUGAR CO	U	H-5
H100051	HAWI NO. 5 RESERVOIR	HAWAII	KOHALA SUGAR CO	U	H-6
H100052	KEHENA RESERVOIR	HAWAII	KOHALA SUGAR CO	U	H-8
H100054	HORNER RESERVOIR	MAUI	PIONEER MILL CO	H	M-8
H100055	WAIKULI RESERVOIR	MAUI	PIONEER MILL CO	H	M-46
H100056	HANAKAOO RESERVOIR	MAUI	PIONEER MILL CO	H	M-3
H100057	KAHOMA RESERVOIR	MAUI	PIONEER MILL CO	H	M-10
H100058	HONOKOWAI RESERVOIR	MAUI	PIONEER MILL CO	H	M-6
H100059	UPPER FIELD 30 RESERVOIR	MAUI	PIONEER MILL CO	H	M-45
H100060	WAILUA RESERVOIR	KAUAI	STATE	U	K-51
H100061	LER KAPAHU RESERVOIR	KAUAI	STATE	H	K-29
H100062	TWIN RESERVOIR	KAUAI	LIHUE PLANTATION CO	H	K-45
H100063	AAHOAKA RESERVOIR	KAUAI	STATE	U	K-1
H100064	FIELD 2 KEALIA RESERVOIR	KAUAI	STATE	U	K-12
H100065	UPPER ANAHOLA RESERVOIR	KAUAI	STATE	U	K-46
H100066	LER ANAHOLA RESERVOIR	KAUAI	STATE	U	K-28
H100067	FIELD 1 KEALIA RESERVOIR	KAUAI	STATE	U	K-11
H100068	RESERVOIR 14	MAUI	HAWAII COMMERCIAL & SUGAR	U	M-22
H100069	RESERVOIR 15	MAUI	STATE	U	M-23

HI00070	RESERVOIR 20	MAUI	STATE	H	M-24
HI00071	RESERVOIR 21	MAUI	HAWAII COMMERCIAL & SUGAR	H	M-25
HI00072	RESERVOIR 22	MAUI	HAWAII COMMERCIAL & SUGAR	H	M-26
HI00073	RESERVOIR 24	MAUI	HAWAII COMMERCIAL & SUGAR	H	M-27
HI00074	RESERVOIR 25	MAUI	HAWAII COMMERCIAL & SUGAR	U	M-28
HI00075	RESERVOIR 30	MAUI	HAWAII COMMERCIAL & SUGAR	U	M-29
HI00076	RESERVOIR 33	MAUI	HAWAII COMMERCIAL & SUGAR	U	M-30
HI00077	RESERVOIR 40	MAUI	HAWAII COMMERCIAL & SUGAR	U	M-31
HI00078	RESERVOIR 42	MAUI	HAWAII COMMERCIAL & SUGAR	U	M-32
HI00079	RESERVOIR 52	MAUI	HAWAII COMMERCIAL & SUGAR	U	M-33
HI00080	RESERVOIR 60	MAUI	HAWAII COMMERCIAL & SUGAR	U	M-34
HI00081	RESERVOIR 61	MAUI	HAWAII COMMERCIAL & SUGAR	U	M-35
HI00082	RESERVOIR 70	MAUI	HAWAII COMMERCIAL & SUGAR	U	M-36
HI00083	RESERVOIR 73	MAUI	HAWAII COMMERCIAL & SUGAR	H	M-37
HI00084	RESERVOIR 74	MAUI	HAWAII COMMERCIAL & SUGAR	H	M-38
HI00085	RESERVOIR 80	MAUI	HAWAII COMMERCIAL & SUGAR	U	M-39
HI00086	RESERVOIR 81	MAUI	HAWAII COMMERCIAL & SUGAR	L	M-40
HI00087	RESERVOIR 82	MAUI	HAWAII COMMERCIAL & SUGAR	L	M-41
HI00088	RESERVOIR 84	MAUI	HAWAII COMMERCIAL & SUGAR	U	M-42
HI00089	RESERVOIR 90	MAUI	HAWAII COMMERCIAL & SUGAR	U	M-43
HI00090	RESERVOIR 92	MAUI	HAWAII COMMERCIAL & SUGAR	U	M-44
HI00091	PEAHI RESERVOIR	MAUI	EAST MAUI IRRIGATION CO	U	M-20
HI00092	PAPAAEA RESERVOIR	MAUI	EAST MAUI IRRIGATION CO	U	M-18
HI00093	KAUPAKULUA RESERVOIR	MAUI	EAST MAUI IRRIGATION CO	U	M-12
HI00094	KAPALAALAEA RESERVOIR	MAUI	EAST MAUI IRRIGATION CO	U	M-11
HI00095	HAIKU RESERVOIR	MAUI	EAST MAUI IRRIGATION CO	H	M-2
HI00096	PAUWELA RESERVOIR	MAUI	EAST MAUI IRRIGATION CO	H	M-19
HI00097	KOLEA RESERVOIR	MAUI	STATE	U	M-13
HI00098	ALEXANDER DAM	KAUAI	ISLAND COFFEE CO	H	K-8
HI00099	WAITA RESERVOIR	KAUAI	GROVE FARM CO	H	K-52
HI00100	KAPA RESERVOIR	KAUAI	ISLAND COFFEE CO	H	K-21
HI00101	HUKIWAI RESERVOIR	KAUAI	ISLAND COFFEE CO	L	K-15
HI00102	IOLEAU RESERVOIR	KAUAI	ISLAND COFFEE CO	L	K-16
HI00103	AEPO RESERVOIR	KAUAI	A & B PROPERTIES	H	K-2
HI00104	HUINAWAI RESERVOIR	KAUAI	A & B PROPERTIES	H	K-14
HI00105	ELIMA RESERVOIR	KAUAI	ISLAND COFFEE CO	H	K-9
HI00106	KUMANO RESERVOIR	KAUAI	A & B PROPERTIES	L	K-27
HI00107	PUU O HEWA RESERVOIR	KAUAI	KNUDSEN TRUST	H	K-43
HI00108	KAUPALE RESERVOIR	KAUAI	A & B PROPERTIES	L	K-23
HI00109	IPUOLONO RESERVOIR	KAUAI	ISLAND COFFEE CO	L	K-17
HI00110	AEPOALUA RESERVOIR	KAUAI	A & B PROPERTIES	H	K-3
HI00111	AEPOEKOLU RESERVOIR	KAUAI	A & B PROPERTIES	H	K-5
HI00112	AEPOEHA RESERVOIR	KAUAI	A & B PROPERTIES	H	K-4
HI00113	OMAO RESERVOIR	KAUAI	A & B PROPERTIES	H	K-37
HI00114	PIWAI RESERVOIR	KAUAI	A & B PROPERTIES	H	K-40
HI00115	PIA MILL RESERVOIR	KAUAI	KNUDSEN TRUST	H	K-39
HI00116	MAU RESERVOIR	KAUAI	ISLAND COFFEE CO	H	K-32
HI00117	ELUA RESERVOIR	KAUAI	ISLAND COFFEE CO	H	K-10
HI00118	MANUHONUHONU RESERVOIR	KAUAI	A & B PROPERTIES	U	K-31
HI00119	MAUKA RESERVOIR	KAUAI	KNUDSEN TRUST	H	K-33
HI00120	PAPUAA RESERVOIR	KAUAI	LIHUE PLANTATION CO	U	K-38
HI00121	HALENANAHU RESERVOIR	KAUAI	LIHUE PLANTATION CO	U	K-13
HI00122	50 MG WAIKOLOA RESERVOIR 2	HAWAII	HAWAII COUNTY - WATER DEPT	H	H-2
HI00123	PUUKAPU RESERVOIR	HAWAII	STATE - DHHL	H	H-11
HI00124	KANEOME DAM	HONOLULU	C&C HONOLULU DPW	H	O-3
HI00125	HAPPY VALLEY FLOOD PREVENTION	MAUI	MAUI COUNTY- DPW	H	M-4
HI00126	KAHANA DAM	MAUI	MAUI COUNTY- DPW	H	M-9
HI00127	NAPILI 4-5	MAUI	MAUI COUNTY- DPW	H	M-16
HI00128	NAPILI 2-3	MAUI	MAUI COUNTY- DPW	H	M-15
HI00129	WAMANALO 60 MGD RESERVOIR	HONOLULU	STATE - DOA	S	O-15
HI00130	HONOKOWAI	MAUI	MAUI COUNTY- DPW	H	M-5
HI00131	PAAUILO RESERVOIR	HAWAII	BISHOP ESTATE (HAWAII)	S	H-10
HI00132	HONOLUA	MAUI	MAUI LAND & PINE CO	L	M-7
HI00133	PUKALANI	MAUI	MAUI LAND & PINE CO	L	M-21

May 2012

Hawaii Regulated Dam Inventory

Circular C-122 (Revised)





Hawaii Regulated Dam Inventory

Circular C-122 (Revised)

Prepared By

**State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
Engineering Division**

Circular C-122 (Revised)

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Introduction

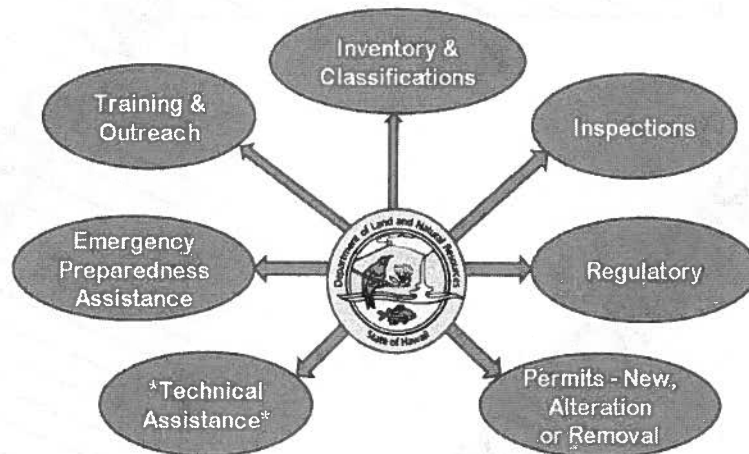
"The Dam and Reservoir Safety Act of 2007", Chapter 179D Hawaii Revised Statutes (HRS), provides for the inspection, operation and maintenance and regulation of construction or alteration of certain dams and reservoirs (including removals), in order to protect the health, safety, and welfare of the citizens of the State by reducing the risk of failure of the dams or reservoirs.

Hawaii Administrative Rules, Title 13, Subtitle 7, Chapter 13-190, "Dams and Reservoirs" established rules governing the design, construction, operation, maintenance, enlargement, alteration, repair, and removal of dams, reservoirs, and appurtenant works in the State of Hawaii.

The Flood Control and Dam Safety Section within the Engineering Division of the Department of Land and Natural Resources administers the dam safety statute and rules and provides guidelines, operational templates, and technical assistance on dam safety.

The major functions of the dam safety program include:

Major Functions of the Dam Safety Program



The inventory of regulated dams, as indicated in the major functions of the Dam Safety Program and as authorized in Chapter 179D HRS, is the initial step needed for the proper administration of the statute. The initial Hawaii inventory of dams was commissioned by the U.S. Congress and was prepared and completed by the U.S. Army Corps of Engineers

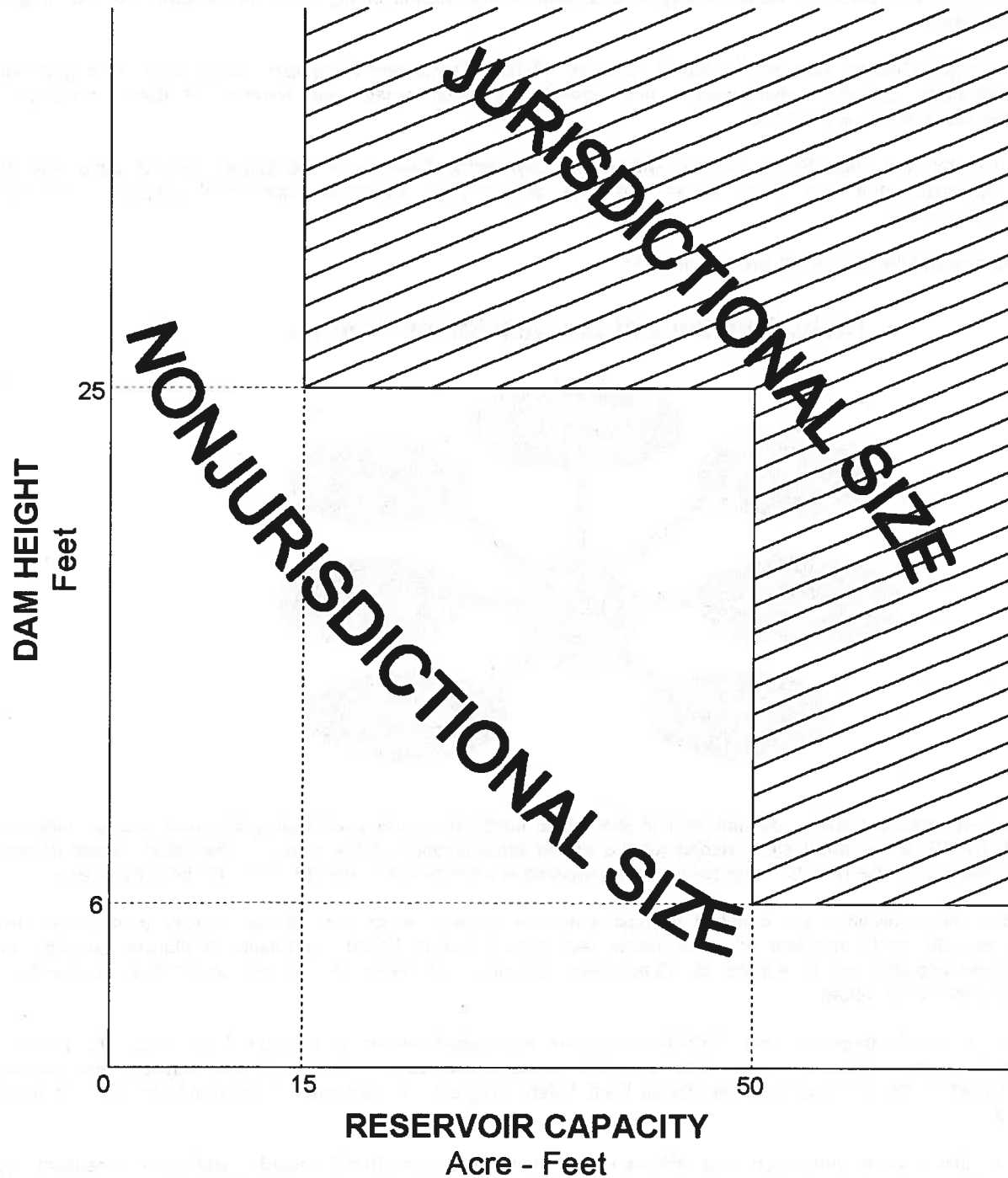
Dams listed in this publication are identified as having artificial barriers, which are 25 feet or more in height or have an impounding capacity of 50 acre-feet or more. Dams less than 6 feet in height, regardless of storage capacity, or that have a storage capacity not in excess of 15 acre-feet regardless of height do not fall under State jurisdiction (see Jurisdictional Chart in this report).

In the State of Hawaii, there are over 140 dams that are inventoried subject to Chapter 179D HRS, the Hawaii State Dam Safety Program. Most of these dams are earth embankment dams. This publication catalogs the inventory of dams that fall within the jurisdiction of the Hawaii Dam Safety Program. A summary of the regulated dams is presented in Appendix A.

Information in this revised publication was obtained from new field data, DLNR records, and from consultant reports. Current information was obtained from dam owners and entered to update the information. New dams were entered from applications and plans submitted by owners and from surveys and supplementary information acquired during inspections and special studies.

Jurisdictional Chart

Jurisdictional chart as defined in Chapter 179D, HRS (Hawaii Dam and Reservoir safety Act of 2007).



Appendix A

National Inventory of Dams (NID) Listing of Hawaii Regulated Dams

Island	NID-ID	Dam-ID	Dam Name
Oahu	HI00001	OA-0001	NUUANU DAM NO. 4
Kauai	HI00002	KA-0002	PUU LUA RESERVOIR
Kauai	HI00003	KA-0003	PUU OPAE RESERVOIR
Kauai	HI00004	KA-0004	KITANO RESERVOIR
Kauai	HI00005	KA-0005	MANA RESERVOIR
Kauai	HI00006	KA-0006	WAIKAIA RESERVOIR
Kauai	HI00007	KA-0007	KEPANI RESERVOIR
Kauai	HI00008	KA-0008	WAIKOLOI RESERVOIR
Kauai	HI00009	KA-0009	KAAWANUI RESERVOIR
Kauai	HI00010	KA-0010	WAIAKALUA RESERVOIR
Kauai	HI00011	KA-0011	AII RESERVOIR
Kauai	HI00012	KA-0012	KAPAIA RESERVOIR
Kauai	HI00013	KA-0013	UPPER KAPAHU RESERVOIR
Kauai	HI00014	KA-0014	OKINAWA RESERVOIR
Kauai	HI00015	KA-0015	KANEHA RESERVOIR
Kauai	HI00016	KA-0016	MIMINO RESERVOIR
Oahu	HI00017	OA-0017	WAIHAWA DAM
Oahu	HI00018	OA-0018	OPAEULA 01 RESERVOIR
Oahu	HI00019	OA-0019	OPAEULA 02 RESERVOIR
Oahu	HI00020	OA-0020	OPAEULA 15 RESERVOIR
Oahu	HI00021	OA-0021	KEMOO 5 RESERVOIR
Oahu	HI00022	OA-0022	UPPER HELEMANO RESERVOIR
Oahu	HI00023	OA-0023	HELEMANO 6 RESERVOIR
Kauai	HI00024	KA-0024	KALIHUWAI RESERVOIR
Oahu	HI00025	OA-0025	KU TREE RESERVOIR
Kauai	HI00029	KA-0029	MORITA RESERVOIR
Kauai	HI00030	KA-0030	KALOKO RESERVOIR
Oahu	HI00037	OA-0037	OAHU RESERVOIR 510
Oahu	HI00038	OA-0038	OAHU RESERVOIR 530
Oahu	HI00039	OA-0039	OAHU RESERVOIR 545A
Hawaii	HI00040	HA-0040	WAIKOLOA RESERVOIR NO. 1
Molokai	HI00041	MO-0041	KUALAPUU RESERVOIR
Hawaii	HI00042	HA-0042	WAIMA 60 MG RESERVOIR
Hawaii	HI00043	HA-0043	PUUKAPU WATERSHED RETARDING DAM R-1
Kauai	HI00044	KA-0044	AHUKINI RESERVOIR
Oahu	HI00045	OA-0045	HELEMANO 16 RESERVOIR
Maui	HI00046	MA-0046	WAIKAMOI DAM NO. 2
Maui	HI00047	MA-0047	PIIHOLO 50 MG RESERVOIR
Maui	HI00048	MA-0048	OLINDA RESERVOIR
Hawaii	HI00049	HA-0049	KEAIWA RESERVOIR
Hawaii	HI00050	HA-0050	HAWI NO. 3 RESERVOIR

Appendix A (cont'd)

National Inventory of Dams (NID) Listing of Hawaii Regulated Dams

Island	NID-ID	Dam-ID	Dam Name
Hawaii	HI00051	HA-0051	HAWI NO. 5 RESERVOIR
Maui	HI00054	MA-0054	HORNER RESERVOIR
Maui	HI00055	MA-0055	WAHIKULI RESERVOIR
Maui	HI00056	MA-0056	HANAKAOO RESERVOIR
Maui	HI00057	MA-0057	KAHOMA RESERVOIR
Maui	HI00058	MA-0058	HONOKOWAI RESERVOIR
Maui	HI00059	MA-0059	RESERVOIR 140
Kauai	HI00060	KA-0060	WAILUA RESERVOIR
Kauai	HI00061	KA-0061	LOWER KAPAHU RESERVOIR
Kauai	HI00062	KA-0062	TWIN RESERVOIRS
Kauai	HI00063	KA-0063	AAHOAKA RESERVOIR
Kauai	HI00064	KA-0064	FIELD 2 KEALIA RESERVOIR
Kauai	HI00065	KA-0065	UPPER ANAHOLA RESERVOIR
Kauai	HI00066	KA-0066	LOWER ANAHOLA RESERVOIR
Kauai	HI00067	KA-0067	FIELD 1 KEALIA RESERVOIR
Maui	HI00068	MA-0068	HC&S RESERVOIR 14
Maui	HI00069	MA-0069	HC&S RESERVOIR 15
Maui	HI00070	MA-0070	HC&S RESERVOIR 20
Maui	HI00071	MA-0071	HC&S RESERVOIR 21
Maui	HI00072	MA-0072	HC&S RESERVOIR 22
Maui	HI00073	MA-0073	HC&S RESERVOIR 24
Maui	HI00074	MA-0074	HC&S RESERVOIR 25
Maui	HI00075	MA-0075	HC&S RESERVOIR 30
Maui	HI00076	MA-0076	HC&S RESERVOIR 33
Maui	HI00077	MA-0077	HC&S RESERVOIR 40
Maui	HI00078	MA-0078	HC&S RESERVOIR 42
Maui	HI00079	MA-0079	HC&S RESERVOIR 52
Maui	HI00080	MA-0080	HC&S RESERVOIR 60
Maui	HI00081	MA-0081	HC&S RESERVOIR 61
Maui	HI00082	MA-0082	HC&S RESERVOIR 70
Maui	HI00083	MA-0083	HC&S RESERVOIR 73
Maui	HI00084	MA-0084	HC&S RESERVOIR 74
Maui	HI00085	MA-0085	HC&S RESERVOIR 80
Maui	HI00086	MA-0086	HC&S RESERVOIR 81
Maui	HI00087	MA-0087	HC&S RESERVOIR 82
Maui	HI00088	MA-0088	HC&S RESERVOIR 84
Maui	HI00089	MA-0089	HC&S RESERVOIR 90
Maui	HI00090	MA-0090	HC&S RESERVOIR 92
Maui	HI00091	MA-0091	PEAHI RESERVOIR
Maui	HI00092	MA-0092	PAPAAEA RESERVOIR
Maui	HI00093	MA-0093	KAUPAKALUA RESERVOIR

Appendix A (cont'd)

National Inventory of Dams (NID) Listing of Hawaii Regulated Dams

Island	NID-ID	Dam-ID	Dam Name
Maui	HI00094	MA-0094	KAPALAALAEA RESERVOIR
Maui	HI00095	MA-0095	HAIKU RESERVOIR
Maui	HI00096	MA-0096	PAUWELA RESERVOIR
Maui	HI00097	MA-0097	KOLEA RESERVOIR
Kauai	HI00098	KA-0098	ALEXANDER
Kauai	HI00099	KA-0099	WAITA RESERVOIR
Kauai	HI00100	KA-0100	KAPA RESERVOIR
Kauai	HI00101	KA-0101	HUKIWAI RESERVOIR
Kauai	HI00102	KA-0102	IOLEAU RESERVOIR
Kauai	HI00103	KA-0103	AEPO RESERVOIR
Kauai	HI00104	KA-0104	HUINAWAI RESERVOIR
Kauai	HI00105	KA-0105	ELIMA RESERVOIR
Kauai	HI00106	KA-0106	KUMANO RESERVOIR
Kauai	HI00107	KA-0107	PUU O HEWA RESERVOIR
Kauai	HI00108	KA-0108	KAUPALE RESERVOIR
Kauai	HI00109	KA-0109	IPUOLONO RESERVOIR
Kauai	HI00110	KA-0110	AEPOALUA RESERVOIR
Kauai	HI00111	KA-0111	AEPOEKOLU RESERVOIR
Kauai	HI00112	KA-0112	AEPOEHA RESERVOIR
Kauai	HI00113	KA-0113	OMAO RESERVOIR
Kauai	HI00114	KA-0114	PIWAI RESERVOIR
Kauai	HI00115	KA-0115	PIA MILL RESERVOIR
Kauai	HI00116	KA-0116	MAU RESERVOIR
Kauai	HI00117	KA-0117	ELUA RESERVOIR
Kauai	HI00118	KA-0118	MANUHONUHONU RESERVOIR
Kauai	HI00119	KA-0119	MAUKA RESERVOIR
Kauai	HI00120	KA-0120	PAPUAA RESERVOIR
Kauai	HI00121	KA-0121	HALENANAHU RESERVOIR
Hawaii	HI00122	HA-0122	WAIKOLOA RESERVOIR NO. 2
Hawaii	HI00123	HA-0123	PUU PULEHU RESERVOIR
Oahu	HI00124	OA-0124	KANEOHE DAM
Maui	HI00125	MA-0125	HAPPY VALLEY FLOOD PREVENTION
Maui	HI00126	MA-0126	KAHANA NUI DAM
Maui	HI00127	MA-0127	NAPILI 4-5 DESILTING BASIN
Maui	HI00128	MA-0128	NAPILI 2-3 DESILTING BASIN
Oahu	HI00129	OA-0129	WAIMANALO 60 MG RESERVOIR
Maui	HI00130	MA-0130	HONOKOWAI - STRUCTURE #8
Hawaii	HI00131	HA-0131	PAAUILO RESERVOIR
Maui	HI00132	MA-0132	UPPER FIELD 14 RESERVOIR
Maui	HI00133	MA-0133	PUU KOA RESERVOIR
Maui	HI00134	MA-0134	KAOPALA BASIN

Appendix A (cont'd)

National Inventory of Dams (NID) Listing of Hawaii Regulated Dams

Island	NID-ID	Dam-ID	Dam Name
Kauai	HI00135	KA-0135	HANAMAULU FIELD 21
Hawaii	HI00136	HA-0136	WAIKOLOA RESERVOIR NO. 3
Oahu	HI00137	OA-0137	OAHU RESERVOIR 155
Maui	HI00138	MA-0138	KAHAKAPAO RESERVOIRS
Maui	HI00139	MA-0139	MAUI FIELD 290 RESERVOIR
Maui	HI00140	MA-0140	UKUMEHAME RESERVOIRS
Maui	HI00141	MA-0141	KEHALANI OFFSITE RETENTION BASIN
Maui	HI00142	MA-0142	MIDDLE FIELD 14 RESERVOIR
Maui	HI00143	MA-0143	KAILI ILI RESERVOIR
Maui	HI00144	MA-0144	MAHINAHINA RESERVOIR
Kauai	HI00145	KA-0145	KAUAI LAGOONS
Kauai	HI00146	KA-0146	HALAULA RESERVOIR
Hawaii	HI00147	HA-0147	PUNAWAI RESERVOIR
Oahu	HI00149	OA-0149	MAUNAOLU RESERVOIR
Maui	HI00150	MA-0150	WAILUKU WATER RESERVOIR 6
Maui	HI00151	MA-0151	WAILUKU WATER RESERVOIR 10
Maui	HI00152	MA-0152	WAIKAMOI RESERVOIRS

**HAWAII REVISED STATUTES
CHAPTER 179D
DAMS AND RESERVOIRS**

Part I. General Provisions

Section

- 179D-1 Short title
- 179D-2 Declaration of purpose
- 179D-3 Definitions
- 179D-4 Liability for damages
- 179D-5 Repealed
- 179D-6 General powers and duties of the board of land and natural resources
- 179D-7 Administrative and judicial review
- 179D-8 Violations; penalties
- 179D-9 Enactment of rules

Part II. Dam and Reservoir Safety

- 179D-21 Certificate of approval to impound
- 179D-22 Entry upon property
- 179D-23 Injunctive relief
- 179D-24 Emergency actions
- 179D-25 Establishment of dam and reservoir safety special fund
- 179D-26 Liens
- 179D-27 Dams and reservoirs completed prior to July 6, 2007
- 179D-28 Dams and reservoirs under construction, enlargement, repair, alteration, or removal before July 6, 2007
- 179D-29 Annual report
- 179D-30 Dam and reservoir owners; general requirements and responsibilities

PART I. GENERAL PROVISIONS

Note Sections 179D-1 to 179D-9 designated as Part I by L 2007, c 262, §2.

§179D-1 Short title. This chapter shall be known and may be cited as the "Hawaii Dam and Reservoir Safety Act of 2007". [L 1987, c 199, pt of §1; am L 2007, c 262, §3]

§179D-2 Declaration of purpose. The purpose of this chapter is to provide for the inspection and regulation of construction, enlargement, repair, alteration, maintenance, operation, and removal of all dams or reservoirs to protect the health, safety, and welfare of the citizens of the State by reducing the risk of failure of the dams or reservoirs. The legislature finds and declares that the inspection and regulation of all dams or reservoirs are properly a matter of regulation under the police powers of the State, unless specifically exempted.

The board shall have jurisdiction of all dams and reservoirs until the department has completed its statewide inspections and has established and implemented rules and criteria for a five year dams and reservoirs inspection and classification processes and the board declares which dams or reservoirs are to be removed from its jurisdiction. [L 1987, c 199, pt of §1; am L 2007, c 262, §4]

§179D-3 Definitions. The following terms, whenever used and referred to in this chapter, shall have the following meanings, unless a different meaning clearly appears in the context:

"Application approval" means authorization in writing issued by the board to an owner who has applied to the board for permission to construct, enlarge, repair, alter, remove, maintain, or operate a dam or reservoir and that specifies the condition or limitations under which work is to be performed by the owner or under which approval is granted.

"Appurtenant works" or "appurtenance" means any structure, such as spillways in the dam or separate therefrom, the reservoir and its rim, low level outlet works, and water conduits, such as tunnels, pipelines, or penstocks, through the dam or its abutment.

"Board" means the board of land and natural resources.

"Certificate of approval to impound" means authorization in writing issued by the board to an owner of an existing dam or reservoir, or an owner who has completed construction, enlargement, repair, or alteration of a dam or reservoir, that specifies the conditions or limitations under which the dam or reservoir is to be maintained and operated.

"Dam" means any artificial barrier, including appurtenant works that impounds or diverts water and that:

- (1) Is twenty-five feet or more in height from the natural bed of the stream or watercourse measured at the downstream toe of the barrier, or from the lowest elevation of the outside limit of the barrier if it is not across a stream channel or watercourse to a maximum water storage elevation;
- (2) Has an impounding capacity at maximum water storage elevation of fifty acre-feet or more. This chapter shall not apply to any artificial barrier that is less than six feet in height regardless of storage capacity or that has a storage capacity at maximum water storage elevation less than fifteen acre-feet regardless of height; or
- (3) Meets additional criteria or is specifically exempt as determined pursuant to rules adopted by the board.

"Department" means the department of land and natural resources.

"Emergency" includes but is not limited to breaches and all conditions leading to or causing a breach, overtopping, or any other condition in a dam or reservoir and its appurtenant works that may be construed as unsafe or threatening to life and property.

"Enlargement" means any change in or addition to an existing dam or reservoir that raises or may raise the water storage elevation of the water impounded by the dam or reservoir.

"Hazard potential" means the possible adverse incremental consequences that result from the release of water or stored contents due to the failure of the dam or reservoir or the misoperation of the dam, reservoir, or appurtenances. The hazard potential classification of a dam or reservoir shall not reflect in any way on the current condition of the dam or reservoir and its appurtenant works, including the dam's or reservoir's safety, structural integrity, or flood routing capacity.

"High hazard" means a dam's or reservoir's failure will result in probable loss of human life.

"Low hazard" means a dam's or reservoir's failure will result in no probable loss of human life and low economic loss or environmental loss, or both. Economic losses are principally limited to the owner's property.

"Operator" means any person who controls, manages, maintains, or supervises the condition and functions of a dam or reservoir.

"Owner" means any person who has a right, title, or interest in or to the dam or reservoir or to the property upon which the dam, reservoir, or appurtenant works is located or proposed to be located.

"Person" means any natural person, partnership, firm, association, organization, corporation, county, county authority, trust, receiver or trustee, limited liability company, limited liability partnership, or company, or any state department, agency, or political subdivision, or any other commercial or legal entity. Whenever used in a section prescribing and imposing a penalty or sanction, the term "person" includes the members of an association or organization, and the officers of a corporation, company, county, or county authority.

"Physical clear access" means a roadway or path that allows timely access for inspection to a dam, reservoir, and its appurtenant works. If by a roadway, the roadway shall be maintained in an accessible condition by a four-wheel drive vehicle even during inclement weather conditions.

"Probable" means more likely than not to occur; reasonably expected; realistic.

"Removal" means complete or partial elimination of the dam or reservoir embankment or structure to restore the approximate original topographic contours of the valley.

"Reservoir" means any basin that contains or will contain water impounded by a dam, including appurtenant works.

"Significant hazard" means a dam's or reservoir's failure will result in no probable loss of human life but can cause major economic loss, environmental damage, disruption of lifeline facilities, or impact other concerns. Significant hazard potential classification dams or reservoirs are often located in predominantly rural or agricultural areas but could be located in areas with population and significant infrastructure. [L 1987, c 199, pt of §1; am L 2007, c 262, §5]

§179D-4 Liability for damages.

- (a) Nothing contained in this chapter shall be construed to constitute a waiver of any immunity of the State and no action or failure to act under this chapter shall be construed to create any liability in the State, board, department, or its officers or employees, for the recovery of damages caused by the action or failure to act.
- (b) Nothing in this chapter and no order, action, or advice of the State, board, department, or any representative thereof, shall be construed to relieve an owner or operator of a dam or reservoir of the legal duties, obligations, or liabilities

incident to the ownership or operation of a dam or reservoir; provided that an owner or operator of a dam or reservoir shall not be liable for damages as a result of only natural causes such as earthquakes of an average recurrence interval of one thousand years, hurricanes, or extraordinary rains of an average recurrence interval in excess of two hundred fifty years.

- (c) The State assumes no ownership obligations, responsibilities, or liability for any action pursuant to section 179D-24. [L 1987, c 199, pt of §1; am L 2007, c 262, §6]

§179D-5 REPEALED. L 2007, c 262, §11.

§179D-6 General powers and duties of the board of land and natural resources.

- (a) All dams or reservoirs in the State shall be under the jurisdiction of the board until the board declares which dams or reservoirs are to be removed from its jurisdiction.
- (b) The board shall administer the dam and reservoir safety program established by this chapter. In carrying out this chapter, the board shall cooperate, advise, consult, contract, and enter into cooperative agreements with the United States government or any of its agencies, other state agencies, and the county governments or any of their agencies. In the performance of its duties, the board shall:
 - (1) Establish by rules adopted under chapter 91, policies, requirements, or standards governing the design, construction, operation, maintenance, enlargement, alteration, repair, removal, and inspection of dams, reservoirs, and appurtenant works for the protection of life and property from structural failure of dams and reservoirs;
 - (2) Conduct investigations and collect data, including technological advances made in dam and reservoir safety practices elsewhere, as may be needed for the proper review and study of the various features of the design, construction, repair, removal, inspection, operation, maintenance, alteration, and enlargement of dams, reservoirs, and appurtenant works. The board may require submittal of reports of investigations from all owners;
 - (3) Conduct investigations and require reports from all owners to be made from time to time, including watershed investigations and studies, as may be necessary to keep abreast of developments affecting stream runoff and as required to facilitate its decisions;
 - (4) Be authorized to enter upon such private property of the dam or reservoir as may be necessary in making, at the owner's expense, any investigation

or inspection required or authorized by this chapter. The entry shall not constitute a cause of action in favor of the owner of the land, except for damages resulting from wilful acts or negligence by the board or its agents;

- (5) Require the owners to apply for, and obtain from the board written approval of plans and specifications on the construction of any new dam or reservoir or the enlargement of any dam or reservoir prior to commencement of any work;
- (6) Require the owners to file an application and secure the written approval of the board before commencing the repair, alteration, or removal of a dam or reservoir, including the alteration or removal of a dam or reservoir so that it no longer constitutes a dam or reservoir as defined in this chapter. Repairs shall not be deemed to apply to routine maintenance not affecting the safety of the structure;
- (7) Require owners to secure the written approval of the board to impound water;
- (8) Require fees to cover a portion of the board's costs in carrying out the administration of dam and reservoir safety;
- (9) Cooperate with all public and private agencies created for the purpose of enhancing dam and reservoir safety activities and training, assist these organizations and agencies in coordinating the use of their facilities, and participate in the exchange of ideas, knowledge, and data with these organizations and agencies;
- (10) Consider dams and reservoirs as important water resources for the State that provide significant benefits to the general public, including irrigation for agriculture and other important uses, and acknowledge the need for dams and reservoirs to be consistently maintained and operated in a safe and feasible manner that sustains their roles as important water resources; provided that public safety concerns are addressed;
- (11) Prepare, publish, and issue printed pamphlets, bulletins, or advisories, or conduct training as the board deems necessary for the dissemination of information to the public;
- (12) Appoint and remove agents and employees, including hearing officers, specialists, and consultants, as necessary to carry out the purposes of this chapter, who may be engaged by the board without regard to the requirements of chapter 76;
- (13) Catalog and maintain an inventory of all regulated dams and reservoirs in the State pursuant to this chapter without regard to chapter 91;

- (14) Establish similar or consistent hazard potential classifications in conjunction with other applicable state or federal guidelines for all regulated dams and reservoirs in the State pursuant to this chapter without regard to chapter 91;
- (15) Examine and approve or disapprove applications for approval of the construction, enlargement, repair, alteration, or removal of a dam or reservoir and applications for certificates of approval to impound;
- (16) Order the suspension, revocation, or both, of any application approval or certificate of approval to impound for any act or failure to comply with this chapter or with any rules or orders adopted pursuant to this chapter, or with any of the conditions contained in or attached to the application approval or certificate of approval to impound;
- (17) Issue orders requiring the adoption by an owner of remedial measures necessary for the safety of life or public or private property, or for carrying out this chapter or rules issued under this chapter;
- (18) Order the immediate cessation of any act that is started or continued without an application approval or certificate of approval to impound as required by this chapter;
- (19) Enter private property and immediately take actions necessary to provide protection to life or property at the owner's expense, including removal of the dam or reservoir. The entry shall not constitute a cause of action in favor of the owner of the land, except for damages resulting from wilful acts or gross negligence by the board or its agents;
- (20) Recover from the owner, in the name of the State, the expenses incurred in taking any action required by the owner of the dam or reservoir in the same manner that debts are recoverable by law;
- (21) Assess civil penalties for violation of this chapter or any rule or standard adopted or order issued by the board pursuant to this chapter;
- (22) Place liens, as needed, on the owner's property, to be collected as delinquent taxes against the lands and property, if the owner neglects to pay any costs, expenses, or penalties chargeable to the owner under this chapter or any rule, order, or condition adopted, issued, or required under this chapter;
- (23) With the assistance of the attorney general, institute and prosecute all court actions that may be necessary to obtain the enforcement of any order issued by the board in carrying out this chapter; and

- (24) Take any and all other actions as may be necessary to carry out this chapter. [L 1987, c 199, pt of §1; am L 2007, c 262, §7; am L 2011, c 154, §1]

§179D-7 Administrative and judicial review.

- (a) The findings and order of the board, and the board's approval or disapproval of an application issued by the State are final, conclusive, and binding upon all owners, state agencies, and other government agencies, regulatory or otherwise, as to the safety of design, construction, enlargement, repair, alteration, removal, maintenance, and operation of any dam or reservoir. The board's approval of an application or a certificate of approval to impound shall not be considered final if it can be demonstrated to the board that the board's approval of the relevant application or certificate of approval was based on one or more misrepresentations.
- (b) Any person who is aggrieved or adversely affected by an order or action of the board shall be entitled to administrative and judicial review in accordance with chapter 91; provided that the order or action shall remain in force until modified or set aside on appeal. [L 1987, c 199, pt of §1; am L 2007, c 262, §8]

§179D-8 Violations; penalties.

- (a) Except as otherwise provided by law, the board may set, charge, and collect administrative penalties and recover administrative fees and costs, including attorney's fees and costs, or bring legal action to recover administrative penalties, fees, and costs, including attorney's fees and costs, or payment for damages or for the cost to correct damages resulting from a violation of this chapter or any rule, order, or condition adopted, issued, or required under this chapter. The administrative penalty shall not exceed \$25,000 per day of a violation, and each day during which the violation continues shall constitute an additional, separate, and distinct violation. The board shall effectuate rules, procedures, and fee schedules to carry out the purposes of this section.
- (b) Any person who negligently or after written notice to comply, violates this chapter or any rule, order, or condition adopted, issued, or required under this chapter, or knowingly obstructs, hinders, or prevents the department's agents or employees from performing duties under this chapter, shall be guilty of a class C felony, and upon conviction thereof, shall be punished as follows:
- (1) For a first conviction, by a mandatory fine of not less than \$2,500 but not more than \$25,000 per day of violation, imprisonment, or both; and

(2) For a second or subsequent conviction, by a mandatory fine of not less than \$5,000 but not more than \$50,000 per day of violation, imprisonment, or both.

- (c) Any criminal action against a person for any violation of this chapter shall not preclude the State from pursuing civil legal action to recover administrative penalties, fees, and costs against that person. Any civil action against a person to recover administrative penalties, fees, and costs for any violation of this chapter or any rule, order, or condition adopted, issued, or required under this chapter shall not preclude the State from pursuing any criminal action against that person.
- (d) With the assistance of the attorney general, the board may seek an injunction and damages in the enforcement of this chapter.
- (e) All penalties, fees, and costs collected pursuant to this section or rules adopted by the board pursuant to this chapter, shall be deposited in the dam and reservoir safety special fund. [L 1987, c 199, pt of §1; am L 2007, c 262, §9]

§179D-9 Enactment of rules.

The department shall adopt the necessary rules not later than one and one-half years after July 1, 2007. [L 1987, c 199, pt of §1; am L 2007, c 262, §10]

[PART II.] DAM AND RESERVOIR SAFETY

[§179D-21] Certificate of approval to impound.

No owner of a dam or reservoir shall impound water without a valid certificate of approval to impound water at the dam or reservoir. [L 2007, c 262, pt of §1]

[§179D-22] Entry upon property.

- (a) The department shall have the right to direct and conduct investigations as it may reasonably deem necessary to carry out its duties as prescribed in this part. For this purpose, the agents or employees of the department or any authorized representatives may enter at reasonable times, without prior notice, any property, public or private, for the purpose of investigating the condition, construction, or operation of any dam, reservoir, or other artificial barrier dealt with in this chapter; provided that if an emergency situation arises as determined by the department, the agents or employees of the department, or any authorized representatives shall have the right to enter without prior notice, any property, public or private, for the purpose of investigating the condition, construction, or operation of any dam, reservoir, or other artificial barrier subject to this chapter, and to take any remedial actions, without a search warrant or liability for trespass.
- (b) It shall be unlawful for any person to refuse entry or access to any authorized representative of the department who requests entry for purposes of inspection and who presents appropriate credentials. It shall also be unlawful to obstruct, hamper, or interfere with any representative while in the process of carrying out the representative's official duties.
- (c) Notwithstanding any other provision of law to the contrary, the board and its agents, engineers, and other employees, for the purposes of enforcing this chapter, may enter upon any land or water in the State that is the subject of an inspection, investigation, or remedial actions without a search warrant or liability for trespass. [L 2007, c 262, pt of §1]

[§179D-23] Injunctive relief.

Whenever in the judgment of the department any person has engaged in or is about to engage in any act or practice that constitutes or will constitute an unlawful action under this chapter, the department may apply to the circuit court of the county in which the unlawful act or practice has been or is about to be engaged in, or in which jurisdiction is appropriate, for an order enjoining the act or practice, or for an order requiring compliance with this chapter. Upon a showing by the department that a person has engaged in or is about to engage in any unlawful act or practice, a permanent or

temporary injunction, restraining order, or other order shall be granted without the necessity of showing lack of an adequate remedy at law. [L 2007, c 262, pt of §1]

[§179D-24] Emergency actions.

- (a) If, in the opinion of the department, conditions of any dam or reservoir are so dangerous to the health and safety of life or property as to not permit time for issuance and enforcement of an order relative to construction, modification, maintenance, or repair of the dam or reservoir, or the dam or reservoir is threatened by any large flood or other natural disaster, the department may immediately employ remedial measures necessary to protect life and property.
- (b) The department shall provide coordination and assistance to the proper state or county agency or agencies to maintain control of any dam or reservoir that, pursuant to subsection (a), has been determined to be dangerous to life or property until the dam or reservoir is deemed safe, or until any emergency conditions that precipitated taking control of the dam or reservoir, pursuant to subsection (a), have been abated. The department may determine the proper time at which to relinquish control of the dam or reservoir.
- (c) Any necessary and reasonable costs and expenses incurred by the department in fulfilling the duties mandated by subsections (a) and (b) in connection with a remedial or emergency action shall be recoverable by the department from the owner of any dangerous or threatened dam or reservoir.
- (d) Any owner failing or refusing, after written notice has been given, to pay the reasonable costs and expenses incurred by the department pursuant to subsection (c) shall be, upon complaint by the department to the attorney general, subject to reasonable attorney fees incurred in the recovery of the costs and expenses.
- (e) All moneys collected by the department pursuant to subsection (c) shall be credited to the dam and reservoir safety special fund created in section 179D-25.
- (f) If a condition arises that in the opinion of the department may pose a danger to the health and safety of persons or property and sufficient time permits, the board may issue orders reciting the existence of the condition and require any actions the board deems necessary. Any person to whom an order is directed, may challenge the order, but shall immediately comply with the order, pending disposition of the person's challenge. The board shall give precedence to a hearing on the challenge over all other pending matters.
- (g) The legislature finds and declares that emergency actions under this section are in the public interest and for the public health, safety, and general welfare of the State, and authorizes the board to take any necessary actions. [L 2007, c 262, pt of §1]

[§179D-25] Establishment of dam and reservoir safety special fund.

- (a) There is established in the department a special fund, to be designated the dam and reservoir safety special fund. The fund shall be administered by the board. The following shall be deposited into the dam and reservoir safety special fund:
 - (1) Appropriations by the legislature;
 - (2) All fees and administrative charges collected under this chapter or any rule adopted thereunder;
 - (3) Moneys collected as fines or penalties imposed under this chapter or any rule adopted thereunder;
 - (4) Moneys derived from public or private sources to benefit dam and reservoir safety;
 - (5) Moneys collected in full or partial satisfaction of liens created under this chapter;
 - (6) Any moneys collected from the sale of retail items by the department relating to dam and reservoir safety;
 - (7) Any other moneys collected pursuant to this chapter or any rules adopted thereunder; and
 - (8) Moneys derived from interest, dividends, or other income from other sources.
- (b) The board may expend moneys from the dam and reservoir safety special fund for:
 - (1) Conducting investigations, research, and the collection of data, including technological advances made in dam and reservoir safety practices elsewhere;
 - (2) Conducting investigations, monitoring, and inspection programs and activities, and enforcement;
 - (3) Preparing and disseminating information to the public concerning activities authorized under this chapter;
 - (4) Training and providing educational activities for department staff and dam and reservoir owners;
 - (5) Employing any necessary remedial measures to protect persons and property in accordance with this chapter;
 - (6) The costs and expenses of the coordination, assistance, control, regulation, abatement, and inspection provided by this chapter; and
 - (7) Other purposes for the administration of the dam and reservoir safety program under this chapter or any rule adopted thereunder, including but not limited to funding permanent or temporary positions that may be appointed without regard to chapter 76.

The board shall provide coordination and assistance to the proper state or county agency or agencies to control any dam, reservoir, and appurtenances subject to section 179D-24 until they have been rendered safe or the emergency has terminated.

- (c) Moneys on balance in the dam and reservoir safety special fund at the close of each fiscal year shall remain in that fund and shall not be transferred or lapsed to the credit of the general fund. [L 2007, c 262, pt of §1]

[§179D-26] Liens.

- (a) Costs of construction, enlargement, repair, alteration, or removal work done to render a dam, reservoir, or appurtenances safe shall constitute a statutory lien against all property of the owner. Notwithstanding any other law to the contrary, the lien shall be considered prior and superior to all other mortgages, liens, or encumbrances of record even if those other mortgages, liens, or encumbrances were filed before the lien pursuant to this subsection becomes due.
- (b) Liens pursuant to subsection (a) may be perfected and foreclosed in advance of construction, enlargement, repair, alteration, or removal or after completion of the construction, enlargement, repair, alteration, or removal. If perfected in advance, the lien shall be perfected by the filing of an affidavit of the board setting forth the estimate of the costs of construction, enlargement, repair, alteration, or removal within the county in which the dam or reservoir is located in the same manner as prescribed for mechanic's liens. When the affidavit is filed, the amount set forth in the affidavit shall be a lien in that amount against all property of the owner. If the actual cost of construction, enlargement, repair, alteration, or removal exceeds the estimated cost, the board may amend the affidavit setting forth the additional estimated cost. If the estimated cost exceeds the actual costs of construction, enlargement, repair, alteration, or removal at completion, the board shall file an amended affidavit at completion. If a lien is perfected in advance and the construction, enlargement, repair, alteration, or removal is not commenced within two years from the date of perfection, the lien shall be void. The board shall file a satisfaction of lien upon payment of the costs of construction, enlargement, repair, alteration, or removal by the owner. [L 2007, c 262, pt of §1]

[§179D-27] Dams and reservoirs completed prior to July 6, 2007.

- (a) Every owner of a dam or reservoir that falls within the definition of a dam or reservoir in this chapter and was completed prior to July 6, 2007 shall file with the board a separate application for a certificate of approval to impound and any other supporting information as required by the board for each dam or reservoir. Each application shall also be accompanied by application fees as required by the board. During the application process for a certificate of approval to impound, the owner or operator of a dam or reservoir may continue to impound water, unless the board determines that the dam or reservoir may pose a danger to the health and safety of persons or property.
- (b) The board shall give notice to file an application for certificate of approval to impound to owners of dams or reservoirs who have failed to file such applications as required by this chapter.

- (c) The notice provided for in this section shall be delivered by certified mail to the owner at the owner's last address of record in the office of the county tax assessor in which the dam or reservoir is located. The mailing shall constitute service.
- (d) The board shall make inspections of any dams and reservoirs, unless the data, records, and inspection reports on file with it are found adequate to enable a determination of whether or not the certificate of approval to impound should be issued.
- (e) The board shall require owners of the dams and reservoirs to perform at their expense any work or tests as may reasonably be required to disclose information sufficient to enable the board to determine whether to issue certificates of approval to impound, or to issue orders directing further work at the owner's expense necessary to safeguard life and property. For this purpose, the board may require an owner or operator to lower the water level of, or to drain, the dam or reservoir.
- (f) If, upon inspection or upon completion to the satisfaction of the board of all work that may be ordered, the board finds that the dam and reservoir are safe to impound water, a certificate of approval to impound shall be issued. The board may find that the dam or reservoir will not safely impound water and may refuse to issue a certificate of approval to impound. Upon finding that the dam or reservoir is unsafe to impound water, the board shall issue a written notice to the owner. After receipt of the notice, the owner shall no longer cause or allow the dam and reservoir to impound water. [L 2007, c 262, pt of §1]

Revision Note

"July 6, 2007" substituted for "effective date of this Act" and "the effective date of this Act" respectively.

[§179D-28] Dams and reservoirs under construction, enlargement, repair, alteration, or removal before July 6, 2007.

- (a) Any dam or reservoir that falls within the definitions of a dam or reservoir in this chapter and which the board finds was under construction, enlargement, repair, alteration, or removal, and based on its findings not more than ninety per cent constructed, enlarged, repaired, altered, or removed on July 6, 2007, except as provided in subsection (b), shall be subject to the same provisions in this section as a dam or reservoir commenced after that date. Every owner of a dam or reservoir subject to this section shall file an application with the board for the board's written application approval of the plans and specifications for the dam or reservoir.

- (b) Construction, enlargement, repair, alteration, or removal work on the dam or reservoir may proceed; provided an application for approval of the plans and specifications is filed; until:
 - (1) An application approval is received by the owner approving the dam or reservoir; or
 - (2) An order is received by the owner specifying how the construction, enlargement, repair, alteration, or removal must be performed to render the dam or reservoir safe.

After receipt of an application approval or order specifying how construction, enlargement, repair, alteration, or removal of the dam or reservoir must be performed, work thereafter must be in accordance with the application approval or order. [L 2007, c 262, pt of §1]

Revision Note

"July 6, 2007" substituted for "effective date of this Act" and "the effective date of this Act" respectively.

[§179D-29] Annual report.

The department shall submit an annual report to the governor and the legislature by January 5 of each year concerning the activities of the department relating to this chapter for the preceding fiscal year. The report shall include but not be limited to information on the following:

- (1) Approvals of plans and specifications for the construction of dams and reservoirs and for alterations, modifications, repairs, removal, and enlargements of any dams and reservoirs;
- (2) A listing of dam and reservoir safety inspections made;
- (3) Use of appropriated funds;
- (4) Rules adopted or amended;
- (5) Enforcement orders and proceedings;
- (6) Dam and reservoir failures and department evaluations of the reasons for the failure, if known; and
- (7) Any other available data regarding the effectiveness of the State's dam and reservoir safety program. [L 2007, c 262, pt of §1]

[§179D-30] Dam and reservoir owners; general requirements and responsibilities.
Dam and reservoir owners subject to regulation under this chapter shall, among other general requirements and responsibilities:

- (1) Maintain an operation and maintenance plan, including an owner or operator, as the case may be, inspection and monitoring program, with written, regularly scheduled reports to the board, to maintain and keep the structure, its appurtenant works, and access in the state of repair and operating condition required by the exercise of due care, with regard for the safety of persons or property, sound and accepted engineering principles, and the rules adopted by the board;
- (2) Establish an emergency action plan for high and significant hazard potential dams and reservoirs and provide this plan to the board, state and county civil defense agencies, and other necessary parties, with regard for the safety of persons or property, sound and accepted engineering principles, and the rules adopted by the board;
- (3) Cooperate with the board's agents, engineers, and employees in carrying out this chapter;
- (4) Facilitate access by any necessary state agencies or authorized representative, to the dam, reservoir, or appurtenances. Access by a four-wheeled-drive vehicle to the dam or reservoir site, and appurtenances if required by the board, shall be maintained at all times; provided that if vehicular access to the dam or reservoir site cannot be maintained during periods of inclement weather, the dam or reservoir owner for high and significant hazard potential dams or reservoirs shall have redundant early warning systems in place, as approved by the board; and
- (5) Furnish upon request the plans, specifications, operating and maintenance data, or other information that is pertinent to the dam and reservoir structure and appurtenances as indicated in this chapter. [L 2007, c 262, pt of §1]

DEPARTMENT OF LAND AND NATURAL RESOURCES

Repeal of Chapter 13-190 and Adoption of Chapter 13-190.1
HAWAII ADMINISTRATIVE RULES

November 22, 2010
(adoption date)

SUMMARY

1. Chapter 13-190, Hawaii Administrative Rules, consisting of §§13-190-1 to 13-190-42 is repealed.
2. Chapter 13-190.1, Hawaii Administrative Rules, entitled "Dams and Reservoirs", is adopted.

**This is to certify that this is a true
and correct copy of the document
on file in the office of the State
Department of Land and Natural
Resources, Honolulu, Hawaii**

MAR 14 2012



Exhibit 4



1. 1971 年 10 月 1 日 起 施 行

2. 凡 在 本 市 各 級 國 有 企 業 工 作 的 職 工 均 應 遵 守 本 規 定

3. 本 規 定 由 市 人 民 政 府 頒 布

4. 附 則

5. 本 規 定 自 1971 年 10 月 1 日 起 施 行 其 他 規 定 與 本 規 定 相 抵 觸 者 以 本 規 定 為 準

6. 本 規 定 由 市 人 民 政 府 負 責 解 釋 其 他 規 定 與 本 規 定 相 抵 觸 者 以 本 規 定 為 準



7. 本 規 定 自 1971 年 10 月 1 日 起 施 行 其 他 規 定 與 本 規 定 相 抵 觸 者 以 本 規 定 為 準

8. 附 則

9. 本 規 定 由 市 人 民 政 府 負 責 解 釋 其 他 規 定 與 本 規 定 相 抵 觸 者 以 本 規 定 為 準



TITLE 13

DEPARTMENT OF LAND AND NATURAL RESOURCES

SUBTITLE 7

WATER AND LAND DEVELOPMENT

CHAPTER 190

DAMS AND RESERVOIRS

Repealed

§§13-190-1 to 13-190-42 Repealed. [R FEB 20 2012]



HAWAII ADMINISTRATIVE RULES

TITLE 13

DEPARTMENT OF LAND AND NATURAL RESOURCES

SUBTITLE 7

WATER AND LAND DEVELOPMENT

CHAPTER 190.1

DAMS AND RESERVOIRS

Subchapter 1 General Provisions

- \$13-190.1-1 Purpose and applicability
- \$13-190.1-2 Definitions
- \$13-190.1-3 Exempt structures
- \$13-190.1-4 Minimum design requirements
- \$13-190.1-5 Violations; penalties
- \$13-190.1-5.1 Criminal violations; penalties
- \$13-190.1-6 Administrative and judicial review
- \$13-190.1-7 Inspections
- \$13-190.1-8 Change in ownership
- \$13-190.1-9 Variances
- \$13-190.1-10 Severability

Subchapter 2 Certificate of Approval to Impound

- \$13-190.1-11 Certificates of approval to impound
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Subchapter 3 Construction, Enlargement, Repair, Alteration, or Removal of Dams and Reservoirs

- \$13-190.1-20 General requirements for construction, enlargement, repair, alteration, or removal of a dam, reservoir, or appurtenant works
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- \$13-190.1-22 Supervision of plans preparation and observation of construction
- \$13-190.1-23 Permit application approval
- \$13-190.1-24 Revocation of approval

Subchapter 4 Construction, Inspection, and Completion

- \$13-190.1-30 General construction requirements for construction, enlargement, repair, alteration, or removal of a dam, reservoir, or appurtenant works
- \$13-190.1-31 Construction completion and acceptance for the construction, enlargement, repair, alteration, or removal of a dam, reservoir, or appurtenant works
- \$13-190.1-32 Complaints as to unsafe conditions during construction

Subchapter 5 Maintenance, Operation, and Emergency Work

- \$13-190.1-40 Maintenance and operation
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Subchapter 6 Remedies

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Subchapter 7 Entry Upon Property

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Subchapter 8 Fees

\$13-190.1-50 Dam permit application fees for
construction, repair, alteration, or
removal

\$13-190.1-51 Certificate of approval to impound fee

\$13-190.1-52 Annual fees

SUBCHAPTER 1

GENERAL PROVISIONS

\$13-190.1-1 Purpose and applicability. (a) The purpose of this chapter is to establish rules for the inspection and regulation of the design, construction, operation, maintenance, enlargement, alteration, repair, and removal of dams, reservoirs, and appurtenant works in the State to protect the health, safety, and welfare of the citizens of the State by reducing the risk of failure of the dams or reservoirs.

(b) This chapter shall not apply to any artificial barrier which is less than six feet in height regardless of storage capacity or which has a storage capacity at maximum water storage elevation less than fifteen acre-feet regardless of height, unless such a barrier, due to its location or other physical characteristics, is a high hazard.

(c) The board shall have jurisdiction of all dams and reservoirs until the department has completed its statewide inspections and has established and implemented rules and criteria for a five-year dams and reservoirs inspection and classification process and the board declares which dams or reservoirs are to be removed from its jurisdiction. [Eff. FEB 20 2012]
(Auth: HRS §179D-6) (Imp: HRS §179D-2)

§13-190.1-2 Definitions. As used in this chapter unless otherwise provided:

"Alteration" means a change to an existing dam or reservoir from the originally approved construction plans and specifications or current condition.

"Application approval" means authorization in writing issued by the board to an owner who has applied to the board for permission to construct, enlarge, repair, alter, remove, maintain, or operate a dam or reservoir and which specifies the conditions or limitations under which work is to be performed by the owner or under which approval is granted.

"Appurtenant works" or "appurtenance" means any structure, such as spillways in the dam or separate therefrom, the reservoir and its rim, including artificial or natural barriers that function as the rim, low level outlet works, and water conduits, such as tunnels, pipelines, or penstocks, through the dam or its abutment that is anticipated to affect the structural integrity of the dam or reservoir.

"Board" means the board of land and natural resources.

"Certificate of approval to impound" means authorization in writing issued by the board to an owner of an existing dam or reservoir, or an owner who has completed construction, enlargement, repair, or alteration of a dam or reservoir, that specifies the conditions or limitations under which the dam or reservoir is to be maintained and operated.

"Dam" means any artificial barrier, including appurtenant works, which impounds or diverts water and:

- (1) Is twenty-five feet or more in height from the natural bed of the stream or watercourse measured at the downstream toe of the barrier, or from the lowest elevation of the outside limit of the barrier if it is not across a stream channel or watercourse, to a maximum water storage elevation;

- (2) Has an impounding capacity at maximum water storage elevation of fifty acre-feet or more. This chapter shall not apply to any artificial barrier which is less than six feet in height regardless of storage capacity or which has a storage capacity at maximum water storage elevation less than fifteen acre-feet regardless of height;
- (3) Was included in circular C 122 (Revised) entitled "Dams within the jurisdiction of the State of Hawaii" dated September 1998;
- (4) Any facility that has two or more reservoirs that operate or function as a single facility or are connected together with an uncontrolled conduit, which shall be construed to be one dam or reservoir. The highest height of any of the embankments and the combined maximum storage volume shall be used as the criteria for determining if the structure is a dam under this chapter; or
- (5) Is a natural structure that retains water and has been altered by the addition of an outlet works and has a maximum storage volume greater than fifty acre-feet.

"Department" means the department of land and natural resources.

"Design water level" means the water elevation that a dam is designed to store, including the flood surcharge, that a dam is designed to impound without overtopping the dam crest. The design water level shall not include freeboard.

"Emergency" means, but is not limited to, breaches and all conditions leading to or causing a breach, overtopping, or any other condition in a dam and its appurtenant structures that may be construed as unsafe or threatening to life or property.

"Engineer" means a registered professional engineer, licensed by the State of Hawaii, and who has experience with dam design and construction.

"Enlargement" means any change in or addition to an existing dam or reservoir which raises or may raise the maximum water storage elevation of the reservoir.

"Freeboard" means the vertical distance above the maximum water surface during the peak discharge in the emergency spillway during the inflow design flood (IDF) to the lowest point on the crest of the dam at which water would flow over the dam at a section not designed for overflow.

"Hazard potential" means the possible adverse incremental consequences that result from the release of water or stored contents due to the failure of the dam or reservoir or operational failures of the dam, reservoir, or appurtenances. The hazard potential classification of a dam or reservoir shall not reflect in any way on the current condition of the dam or reservoir and its appurtenant works, including the dam's or reservoir's safety, structural integrity, or flood routing capacity.

"High hazard" means a dam's or reservoir's failure will result in probable loss of human life.

"Inflow design flood" is the flood hydrograph used in the design or evaluation of a dam, its appurtenant works particularly for sizing the spillway and outlet works, with which the upper limit of the inflow design flood is the probable maximum flood.

"Low hazard" means a dam's or reservoir's failure would result in no probable loss of human life and low economic loss or environmental loss, or both. Economic losses are principally limited to the owner's property.

"Maximum water storage elevation" means the maximum water surface elevation that can be hydrologically attained in the reservoir, or at the dam crest elevation if hydrologic loading is unknown.

"Operator" means any person who controls, manages, maintains, or supervises the condition and functions of a dam or reservoir.

"Outlet works" means a tunnel or pipe/conduit (low level outlet) that is used to drain the reservoir and often used to regulate flow to downstream users.

"Owner" means any person who has a right, title, or interest in or to the dam or reservoir or to the property upon which the dam or appurtenant works is located or proposed to be located.

"Person" means any natural person, partnership, firm, association, organization, corporation, county, county authority, trust, receiver or trustee, limited liability company, limited liability partnership, or company, or any state department, agency, or political subdivision, or any other commercial or legal entity. Whenever used in a section prescribing and imposing a penalty or sanction, the term "person" shall include the members of an association or organization, and the officers of a corporation, company, municipality, or municipal authority.

"Physical clear access" means a roadway or path that allows timely access for inspection to a dam, reservoir, and its appurtenant works. If by a roadway, the roadway shall be maintained in an accessible condition by a four-wheel-drive vehicle even during inclement weather conditions.

"Probable" means more likely than not to occur, reasonably expected, realistic.

"Removal" means complete removal or partial removal of the dam or reservoir embankment or structure to restore the approximate original topographic contours of the valley.

"Repair" means construction to an existing dam or appurtenant works that does not significantly change the reservoir's storage capacity or alter significantly the existing structure as it exists. Repair shall not apply to routine maintenance not affecting the safety of the dam or appurtenant works.

"Reservoir" means any basin which contains or will contain water impounded by a dam, including appurtenant works.

"Significant hazard" means a dam's or reservoir's failure will result in no probable loss of human life but can cause major economic loss, environmental damage, disruption of lifeline facilities, or impact other concerns. Significant hazard potential classification dams or reservoirs are often located in predominantly rural or agricultural areas but could be located in areas with population and significant infrastructure.

"Spillway" means a device which conveys flood waters from the reservoir past the dam without endangering its safety or integrity.

"Spillway crest" means the lowest point in the spillway above which water can flow over or through the spillway.

"Storage capacity" means the maximum volume of water and material which could be impounded by a dam when the water level is at the top of the dam or at the highest elevation which could be hydrologically attained, if this elevation is below the top of dam. [Eff. FEB 20 2012] (Auth: HRS §179D-6) (Imp: HRS §179D-3)

§13-190.1-3 Exempt structures.

Structures exempt from these rules include:

- (1) A transportation structure such as a highway or road fill that exists solely for transportation purposes;
- (2) Refuse embankments (e.g., solid waste disposal facilities); and
- (3) Structures that store water only below the lowest point of the natural ground, unless the structure retains more than fifteen acre-feet and an outlet works is constructed to release water. [Eff. FEB 20 2012]
(Auth: HRS §179D-6) (Imp: HRS §179D-6)

§13-190.1-4 Minimum design requirements. (a)

Regulated dams and reservoirs shall incorporate the following minimum design requirements:

- (1) Embankment slopes that are not steeper than 2.5 horizontal to 1 vertical unless a specific design for a steeper slope shows that the embankment is stable and capable of being safely maintained;
- (2) An embankment crest that has a minimum width of ten feet;

- (3) Earthen spillways that are constructed in natural ground; and
- (4) A low level outlet shall be designed to drain the reservoir by gravity flow.
- (b) Significant and high hazard dams shall also have a stability analysis of the structure demonstrating the stability of the embankment slopes for various loading conditions and minimum factors of safety generated by a methodology accepted by the department.
- (c) Regulated dam spillways shall safely pass the appropriate inflow design flood, as shown in the following table:

Hazard Classification	Size Classification	Inflow design flood
Low	Small	100 year
	Intermediate	100 year
	Large	$\frac{1}{2}$ PMF
Significant	Small	$\frac{1}{2}$ PMF
	Intermediate	$\frac{1}{2}$ PMF
	Large	PMF
High	All Sizes	PMF

Category	Impoundment	
	Storage (Acre-feet)	Height (feet)
Small	<1000 and ≥ 50	<40 and ≥ 25
Intermediate	$\geq 1,000$ and <50,000	≥ 40 and <100
Large	$\geq 50,000$	≥ 100

Note: "PMF" or "Probable Maximum Flood", is defined as the flood that may be expected from the most severe combination of critical meteorologic and hydrologic conditions that are reasonably possible in the region. The PMF is derived from the 24-hour probable maximum precipitation (PMP), which information is available from the National Weather Service, NOAA, Publication HMR-39, "Hydrometeorological Report No. 39 - Probable Maximum

Precipitation in the Hawaiian Islands", or current standard. $\frac{1}{2}$ PMF = PMF divided by two. "100 year" is defined as the flood associated with the 1 per cent probability storm event that is derived from the 24-hour 100-year precipitation rate, which is identified in the US Weather Bureau Technical Paper No. 43 Rainfall-Frequency Atlas of the Hawaiian Islands and as updated by NOAA Atlas 14, Volume 4 Precipitation-Frequency Atlas of the United States, Hawaiian Islands, or current standard.

(d) Freeboard shall be the greater of the following:

- (1) Two feet above the water level during the peak spillway flow associated with the inflow design flood;
- (2) Sum of the wave run-up and reservoir setup resulting from a 100 miles per hour wind speed during the peak spillway flow associated with the inflow design flood.
[Eff. FEB 20 2012] (Auth: HRS §179D-6)
(Imp: HRS §179D-6)

§13-190.1-5 Violations; penalties. (a) Except as otherwise provided by law, the board may set, charge, and collect administrative penalties and recover administrative fees and costs, including attorney's fees and costs, or bring legal action to recover administrative penalties, fees, and costs, including attorney's fees and costs, or payment for damages or for the cost to correct damages resulting from a violation of chapter 179D, HRS, this chapter, or any order or condition adopted, issued, or required under this chapter. The administrative penalty shall not exceed \$25,000 per day of a violation, and each day during which the violation continues shall constitute an additional, separate, and distinct violation. Proceedings under this section shall be conducted pursuant to the administrative rules for the department.

(b) With the assistance of the attorney general, the board may seek an injunction and damages in the enforcement of this chapter.

(c) All penalties, fees, and costs collected pursuant to this section or other rules adopted by the board pursuant to chapter 179D, HRS, shall be deposited in the dam and reservoir safety special fund. [Eff. FEB 20 2012] (Auth: HRS §§179D-6, 179D-8) (Imp: HRS §179D-8)

§13-190.1-5.1 Criminal violations; penalties.
Criminal sanctions regarding violations of this chapter and chapter 179D, HRS, are as provided in section 179D-8, HRS. [Eff. FEB 20 2012] (Auth: HRS §179D-8) (Imp: HRS §179D-8)

§13-190.1-6 Administrative and judicial review.
(a) The findings and orders of the board, and the board's approval or disapproval of an application issued by the State are final, conclusive, and binding upon all owners, state agencies, and other government agencies, regulatory or otherwise, as to the safety of design, construction, enlargement, repair, alteration, removal, maintenance, or operation of any dam or reservoir, and the certificate of approval to impound. The board's approval of an application or a certificate of approval to impound will not be considered final if it can be demonstrated to the board that the board's approval of the relevant application or certificate of approval was based on one or more misrepresentations or other relevant data.

(b) Any person aggrieved or adversely affected by an order or action of the board is entitled to administrative and judicial review in accordance with chapter 91, HRS, and the department's applicable administrative rules on administrative and judicial review in effect at the time, provided, however, that the order or action shall remain in force until

modified or set aside on appeal. [Eff. FEB 20 2012]
(Auth: HRS §179D-8) (Imp: HRS §179D-7)

§13-190.1-7 Inspections. Any inspections done pursuant to this chapter shall use the current guidelines developed by the department. [Eff.

FEB 20 2012] (Auth: HRS §179D-6) (Imp: HRS §179D-6)

§13-190.1-8 Change in ownership. Changes in ownership of a dam shall be filed with the department by the transferring owner within seven days of recordation with the bureau of conveyances of the State of Hawaii. [Eff. FEB 20 2012] (Auth: HRS §179D-6) (Imp: HRS §179D-6)

§13-190.1-9 Variances. The board or department may, upon a showing of good cause, grant a variance from any provision of this chapter, including, without limitation, an extension of time to comply with any such provision. [Eff. FEB 20 2012] (Auth: HRS §179D-6) (Imp: HRS §179D-6)

§13-190.1-10 Severability. If any portion of these rules is found to be invalid, the remaining portion of the rules shall remain in force. [Eff. FEB 20 2012] (Auth: HRS §179D-6) (Imp: HRS §179D-6)

SUBCHAPTER 2

CERTIFICATE OF APPROVAL TO IMPOUND

§13-190.1-11 Certificates of approval to impound. No owner of a dam or reservoir shall impound water without a valid certificate of approval to impound water at the dam or reservoir. A certificate of approval to impound shall be valid for five years from the date of issuance, unless otherwise stated by the department, and provided all conditions of the certificate are fulfilled and maintained to the satisfaction of the department. [Eff. FEB 20 2012]
(Auth: HRS §179D-6) (Imp: HRS §179D-21)

§13-190.1-12 Applications for certificate of approval to impound. (a) Every owner of a dam or reservoir that is a regulated structure as defined in section 13-190.1-2 shall file an application for a certificate of approval to impound.

(b) All applications shall be submitted with supporting information as required by the department.

(c) Each application shall also be accompanied by application fees as required by subchapter 8.

(d) During the application process for the initial certificate of approval to impound, the owner or operator of a dam or reservoir that was completed prior to July 6, 2007, shall be allowed to impound water, unless the board determines that the dam or reservoir may pose a danger to the health and safety of persons or property. [Eff. FEB 20 2012] (Auth: HRS §179D-6) (Imp: HRS §179D-21)

§13-190.1-13 Notice. (a) The board shall give notice to file an application for certificate of approval to impound to owners of dams or reservoirs known to the department, who have failed to file such applications as required by this chapter.

(b) The notice provided for in this section shall be delivered by certified mail to the owner at the owner's last address of record in the office of the county tax assessor for the county in which the dam or reservoir is located.

(c) Service of the notice shall be complete upon the mailing of the notice.

(d) All owners shall submit an application for certificate of approval to impound water within ninety days from the date of the notice, unless the owner has filed a request for exemption. An owner who fails to submit an application for certificate of approval to impound within ninety days from the date of notice shall be deemed in violation of these rules and subject to penalties consistent with sections 13-190.1-5 and 13-190.1-5.1. [Eff. FEB 20 2012] (Auth: HRS §179D-6) (Imp: HRS §179D-27)

§13-190.1-14 Application review process. (a) The department shall inspect the dams and reservoirs, unless the data, records, and inspection reports on file with the department are found adequate to enable a determination of whether or not the certificate of approval to impound should be issued.

(b) The department shall require owners of the dams and reservoirs to perform at their expense any work, tests, or investigation as may reasonably be required to disclose information sufficient to enable the board to determine whether to issue certificates of approval to impound, or to issue orders directing further work at the owner's expense necessary to safeguard life and property.

(c) The board shall issue a certificate of approval to impound for dams and reservoirs that do not have severe deficiencies that affect the structural safety or operational integrity of a facility or that may threaten the safety of the dam.

(d) In order to protect public safety, the department shall require an owner or operator to lower the water level of, or to drain the dam or reservoir,

or impose conditions on a certificate to impound application approval.

(e) Upon inspection, review of investigation findings, or satisfactory correction of severe deficiencies, if the department finds that the dam and reservoir are safe to impound water, a certificate of approval to impound shall be issued.

(f) The department shall not issue a certificate of approval to impound when a dam or reservoir is determined by the department to be unsafe to impound water. Upon finding that the dam or reservoir is unsafe to impound water, the department shall issue a written notice to the owner. After receipt of the notice, the owner shall no longer cause or allow the dam or reservoir to impound water unless consent is obtained from the department. [Eff. FEB 20 2012]
(Auth: HRS §179D-6) (Imp: HRS §179D-21)

§13-190.1-15 Noncompliance. The board may order the suspension, revocation, or restriction of any certificate of approval to impound, for any act or failure to comply with chapter 179D, HRS, these rules, or orders issued pursuant to chapter 179D, HRS, or with any of the conditions contained in or attached to the application approval or certificate of approval to impound. [Eff. FEB 20 2012] (Auth: HRS §179D-6)
(Imp: HRS §179D-21)

§13-190.1-16 Transferability. Certificates of approval to impound water are not transferable from one person to another without written approval from the board; and:

- (1) The existing holder of the certificate to impound requests a transfer in writing to the department; and
- (2) The new or prospective dam owner submits in writing to the department:

- (A) Proof that the person is or will become the owner of the dam;
- (B) The date of change in ownership; and
- (C) An acknowledgment of receipt of a copy of the certificate of approval to impound that is in effect, and of the person's awareness of the terms, including and without limitation, any conditions or restrictions on the operation imposed by the department.
[Eff. FEB 20 2012] (Auth: HRS §179D-6) (Imp: HRS §§179D-6, 179D-21)

SUBCHAPTER 3

CONSTRUCTION, ENLARGEMENT, REPAIR, ALTERATION, OR REMOVAL OF DAMS AND RESERVOIRS

§13-190.1-20 General requirements for construction, enlargement, repair, alteration, or removal of a dam, reservoir, or appurtenant works.

(a) No person shall construct, enlarge, repair, alter, or remove any dam or reservoir until a dam permit application form has been filed, approval of the construction plans and specifications is obtained from the board, and a written application approval is issued. Owners proposing routine maintenance not affecting the safety of the structure are exempted from the requirements of this subchapter. All submittals shall be in accordance with this chapter. The department guidelines shall assist but not limit evaluation of the application.

(b) Nothing in this chapter grants an exemption from any applicable federal, state, or county governmental requirements.

(c) The applicant shall notify in writing, the county engineer or appropriate person within the county, for which the dam or reservoir is located, of the submittal of a permit application for the construction, enlargement, repair, alteration, or

removal of a dam or reservoir. A copy of this notification letter shall be submitted to the department by the applicant.

(d) A separate application shall be filed with the department for each regulated dam or reservoir and for each separate project. The applicant shall submit to the department, three hard copies and an electronic copy on disk of the application package. The application package shall consist of the following:

- (1) The department's dam permit application form. Each application shall be made on forms furnished by the department and shall be signed by the dam owner or an authorized representative of the dam owner. If there are multiple owners of the property where the dam is located, a property map shall be provided showing the dam with the property lines identified for each owner. A notarized letter of concurrence and agreement from the owners of all property on which the proposed project is being conducted is required. Each application shall include at a minimum the following:
 - (A) Name and address of the applicant;
 - (B) Name and address of the owner or owners and their associated tax map key numbers of the properties upon which the works are to be constructed, enlarged, repaired, altered, or removed;
 - (C) Description of the location, type, size, purpose, and height of the proposed, enlarged, repaired, altered, or removed dam, and the reservoir and appurtenant works;
 - (D) Storage capacity and reservoir surface areas for maximum water storage elevation and design water level;
 - (E) Plans for installation of any permanent instrumentation at the dam or appurtenant structures;

- (F) Area of the drainage basin, rainfall and stream flow records, and flood-flow records and estimates (as applicable);
 - (G) Relevant construction drawings, plans, and specifications signed and sealed by the design engineer, licensed in the State of Hawaii; and the name and address of the design engineer who prepared the plans and specifications;
 - (H) Proposed times of commencement and completion of the proposed activity; and
 - (I) A listing of all sources of inflow to the reservoir (as applicable);
- (2) Design reports. A design report shall be submitted with the application package (as applicable to the proposed activity). The report shall include information sufficient to evaluate the design of the new or to be enlarged, repaired, altered, or removed dam and the appurtenances, including references and page numbers, to support any assumptions or criteria used in the design. The report shall include calculations and be sufficiently detailed to accurately define the final design of the proposed dam project as represented in the construction plans. The report shall include but not be limited to the following items, as applicable for the proposed activity:
- (A) Hydraulic and hydrologic report;
 - (B) Geotechnical report;
 - (C) Seepage analysis;
 - (D) Spillway analysis;
 - (E) Foundation evaluation;
 - (F) Analysis of the downstream effects;
 - (G) Anticipated construction sequence needed to complete the project;
 - (H) Anticipated permit and approvals required; and
 - (I) Other reports as necessary;

- (3) Construction plans and specifications. Construction plans and specifications shall meet the following requirements:
- (A) The plans shall show the design of the dam, dam enlargement, repair, alteration, or removal, and each appurtenant structure, in sufficient detail so that the contractor or builder is able to construct the proposed structure from the plans and specifications;
 - (B) The front cover sheet of the plan shall include a site map of the dam, reservoir area, and appurtenances, the name of the dam facility and the state dam inventory identification (if available), the county and island in which the dam is located, tax map key numbers of all parcels the dam or reservoir is situated on, project location and vicinity maps, and an index of sheets;
 - (C) Drawings shall be prepared in an appropriate scale so details are legible with an overall size of 24-inches high and 36-inches wide or 22-inches high and 34-inches wide;
 - (D) Spillway and outlet discharge rating curves and tables, and reservoir area-capacity curves and tables, shall be placed on the drawings, as applicable;
 - (E) The front cover of the specifications shall show the title name and state inventory identification number of the dam and the county in which the dam is located;
 - (F) The general conditions shall include statements that the plans and specifications cannot be significantly changed without prior written approval of the department and the design engineer of record;

(G) The specifications shall provide that the owner's construction engineer will monitor the construction of the project. The construction engineer monitoring the construction for the owner is responsible for the quality of construction, compliance with the approved design and specifications, review and approval of all construction change orders, and preparation of the project completion documents;

(H) The following items, at a minimum, shall be included in the construction plans, as applicable:

- (i) Elevation view along longitudinal axis of dam and foundation;
- (ii) Cross-sectional view of dam at location of maximum height;
- (iii) Cross-sectional views and profiles of spillway(s), outlet facilities, and other appurtenances;
- (iv) Steel reinforcement placement and bar sizing for concrete construction must be shown in at least one section or profile; and
- (v) The plan for diversion and control of water during construction; and

(I) The following items shall be included in the specifications, as applicable:

- (i) The type, class, or description of all materials to be used;
- (ii) The requirements for fill placement, moisture conditioning, and minimum level of compaction of all earth zones; and
- (iii) The requirements, procedures, and minimum standards for

concrete construction or
structural details;

- (4) Construction quality assurance plan. An approved quality assurance plan describing all aspects of construction supervision and protocol for change requests, approvals, and field inspection;
- (5) Detailed cost estimate. A detailed cost estimate for the construction of the dam project including the engineering fees;
- (6) Filing fee. The filing fee shall be pursuant to section 13-190.1-50; and
- (7) The following items shall be submitted either with the application package or during construction:
 - (A) An emergency action plan;
 - (B) An operation and maintenance plan to accomplish the annual maintenance, including record keeping documents;
 - (C) An instrumentation plan regarding instruments that evaluate the performance of the dam;
 - (D) Proposed construction schedule. A proposed construction schedule shall be provided with the construction package. The schedule should identify key benchmarks and milestones and any long lead items; and
 - (E) Construction emergency action plan. Prior to the start of construction, the applicant shall submit a copy of an approved emergency action plan for use during the construction, modification, or alteration of the dam and reservoir. This plan shall address possible deficiencies and concerns that may arise at specific phases of the work. The plan shall also include applicable operations, maintenance, and inspection work that should be followed during the construction phase. [Eff. FEB 20 2012]
(Auth: HRS §179D-6) (Imp: HRS §179D-6)

§13-190.1-21 Additional requirements for removal of dam or reservoir. (a) No person shall remove any dam, reservoir, or appurtenant works until written approval is obtained from the board. The application for removal shall include, but not be limited to, the following information:

- (1) The current height and storage of the dam;
- (2) The current hazard classification;
- (3) The proposed flow through channel width and side slopes;
- (4) A description of and quantitative analyses of the flow through conditions during the 100-year, 24-hour storm event including provision for erosion protection;
- (5) Evaluation of all potential effects on life, property, and environment downstream; and
- (6) For a partial removal of a dam that will still store water, the relevant deficiencies identified in the initial investigation or inspection reports shall be addressed.

(b) Plans for removal of a dam or reservoir, shall meet the following requirements:

- (1) The dam shall be excavated down to the level of the natural ground or to sufficient cut depth to prevent silt previously deposited in the reservoir or material excavated for the channel from washing downstream. The plan shall address sediment that has been previously deposited in the reservoir;
- (2) The channel shall be of sufficient width to pass the 100-year, 24-hour flood with maximum depth of five feet of water anywhere in the channel at any time during the flood. Results of analyses demonstrating the 100-year, 24-hour flood can be safely passed within the breached section while maintaining five feet or less of water in the remaining reservoir shall be submitted for review;

- (3) Regardless of the hydraulic requirements, the bottom width of the channel shall be a minimum of fifteen feet;
- (4) The side slopes of the channel shall be excavated to a slope that is stable, but not steeper than 2:1 (horizontal:vertical). Slope stability analysis that provides an adequate factor of safety for steeper slopes may be accepted by the department but in no case steeper than 1:1;
- (5) A detailed flood study for the 100-year storm frequency events shall be performed for the existing conditions and proposed removed or partially removed dam;
- (6) If the partially removed dam will store more than 2 million gallons (6 acre-feet) of water, the plan shall provide a dam break inundation map of the downstream community at risk from the altered dam structure, assuming full water level at the time of failure;
- (7) Transitions to downstream channels shall be investigated and appropriate provisions made to mitigate against possible damage or flooding;
- (8) The exposed slopes within the 100-year, 24-hour storm depth shall be protected with riprap, vegetation, or other suitable means to prevent headcutting, downcutting, and lateral slope erosion; and
- (9) The reservoir shall be emptied before removal of the dam. [Eff. FEB 20 2012]
(Auth: HRS §179D-6) (Imp: HRS §179D-6)

§13-190.1-22 Supervision of plans preparation and observation of construction. (a) The design engineer shall supervise the preparation of all plans and specifications for the initial construction, enlargement, alteration, repair, or removal of dams and reservoirs.

(b) The observation of the construction shall be conducted by the construction engineer, as referenced in subchapter 4. Requirements for documentation of construction are provided in subchapter 4.

(c) The design engineer and construction engineer may be assisted by other specialists, under the design or construction engineer's direction, as required. [Eff. FEB 20 2012] (Auth: HRS §179D-6) (Imp: HRS §179D-6)

§13-190.1-23 Permit application approval. (a) The permit application will be reviewed for compliance with the requirements provided in this chapter and in general accordance with standard practice for dam safety. If an application is incomplete or defective, it shall be returned to the applicant. The application shall be corrected and returned to the board within ninety days or such further time as may be given by the department in order to retain its validity. If the application is not returned within the required time limit, it shall be deemed automatically rejected.

(b) After the department has determined that the application is complete and the plans and specifications conform to this chapter and generally accepted engineering practice, the board shall approve the plans and specifications and issue an application approval with any conditions determined to be appropriate by the board.

(c) Actual construction, enlargement, repair, alteration, or removal shall be commenced within the time frame set by the board in the application approval; otherwise, the application approval becomes void. The department may, upon written application and for good cause shown, extend an owner's time for commencing construction, enlargement, repair, alteration, or removal of a dam or reservoir.

(d) Actual construction, enlargement, repair, alteration, or removal of a dam or reservoir shall be completed with five years of issuance of the

application approval unless an extension authorized in writing by the board is issued.

(e) The board decision under subsection (b) shall be made within 180 days of the receipt by the department of a complete application package. [Eff.

FEB 20 2012] (Auth: HRS §179D-6) (Imp: HRS §179D-6)

§13-190.1-24 Revocation of approval. (a) The board shall consider the revocation of the application approval in whole or in part for any of the following:

- (1) Material false statement in the application or in any report or statement of fact required pursuant to this chapter;
- (2) Violation of this chapter;
- (3) Violation of the approved plans and specifications;
- (4) Non-compliance of any conditions as set by the board; or
- (5) Discovery of unforeseen unsafe conditions.

(b) In any proceeding for revocation, the board shall give prior written notice to the affected owner of the facts or conditions which warrant the action and provide the applicant or owner an opportunity for a hearing. [Eff. FEB 20 2012] (Auth: HRS §179D-6) (Imp: HRS §179D-6)

SUBCHAPTER 4

CONSTRUCTION, INSPECTION, AND COMPLETION

§13-190.1-30 General construction requirements for construction, enlargement, repair, alteration, or removal of a dam, reservoir, or appurtenant works. For the actual construction work for the construction, enlargement, repair, alteration, or removal of a dam, reservoir, or appurtenant works, the owner or

applicant, or both, shall be responsible for providing and complying with the following:

- (1) Construction engineer's observation of construction.
 - (A) Prior to the start of any work on the dam or reservoir, the owner or applicant shall provide a construction engineer, to ensure compliance with the approved plans and specifications, including any approved change orders and the construction quality assurance plan;
 - (B) The construction engineer shall have ultimate responsibility for the supervision of all inspection tasks and compliance with approved plans and specifications; and
 - (C) The construction engineer may assign some inspection tasks to a duly authorized agent, under the construction engineer's supervision;
- (2) A construction quality assurance plan. A construction quality assurance plan shall be prepared and submitted to the department at least thirty days prior to the start of construction, which details the minimum requirements of the construction engineer's observation of construction. The minimum components of this plan shall include the following as applicable:
 - (A) Listing of parties and their roles and responsibility;
 - (B) Names and qualifications of the engineer(s) and staff to be used on the project;
 - (C) Anticipated construction observation schedule for the construction engineer and staff;
 - (D) Schedule of observations and inspections (with reference to specification sections), such as the observation of the foundation or other

- inspections, as deemed appropriate by the department or design engineer;
- (E) Schedule of required submittals, including shop drawings (with reference to specification section);
 - (F) Schedule of construction material tests (with reference to specification section); and
 - (G) Schedule of construction performance tests (with reference to specification section);
- (3) Construction records. The construction engineer shall maintain a record of construction that, at a minimum, shall include: daily activity and progress reports; all test results pertaining to construction; photographs sufficient to provide a record of foundation conditions and various stages of the construction through completion; all geologic information obtained; and construction problems and remedies;
 - (4) Construction schedule;
 - (5) Construction emergency action plan;
 - (6) Labor and material bonds. Where the project construction estimate exceeds \$500,000 (including design), the owner shall furnish evidence of a bond for labor and materials for the approved construction or alteration work, unless otherwise allowed by the board;
 - (7) General liability insurance. Insurance coverage must be maintained for the minimum amounts stipulated by the department, with a provision identifying the department as an additional insured, and evidence of insurance provided to the department prior to the start of construction;
 - (8) Change order requirements. When unforeseen site conditions or material availability require that the construction work differ significantly from the approved plans and specifications, a change order, including

details, must be provided by the construction engineer to the department:

- (A) No change shall be executed until approved by the department;
 - (B) Major changes must be submitted in writing with supporting documentation, and approved in writing by the department;
 - (C) If the department determines that the proposed construction change order represents a significant modification of the application approval that could have an effect on structural integrity or safe operations of the project, then approval of the change order by the board or department shall be required;
 - (D) If board approval of the proposed construction change order is required, no action can be taken by the owner to make the construction change until approval is given by the board; and
 - (E) Minor changes may be transmitted verbally by the construction engineer and approved by the department verbally, provided documentation of the change is provided to the department within ten days of the approval;
- (9) A pre-construction meeting shall be held subsequent to submitting the construction observation and quality assurance plan, but not later than fourteen days prior to start of construction. All parties actively involved in the construction should be requested to attend, such as the dam owner, the design engineer, the construction engineer, the contractor, and the department. At a minimum, the following should be discussed:
- (A) Project personnel and roles:
 - (i) Project communication protocol between the owner, construction engineer, and the department shall

- be established at the pre-construction meeting; and
- (ii) The names of the contractors and any principals in charge shall be furnished to the department at the meeting;
- (B) Project schedule;
- (C) Special issues:
 - (i) The means used to divert and carry inflows into the reservoir;
 - (ii) Reservoir filling requirements; and
 - (iii) Special permitting requirements;
- (D) The contractor's quality control plan, developed by the contractor shall be thoroughly explained, including but not limited to the following:
 - (i) Identification of the firm that will conduct the construction material tests in the field and in the laboratory;
 - (ii) Schedule of required submittals, including shop drawings (including reference to specification section);
 - (iii) Schedule of construction material tests (including reference to specification section);
 - (iv) Schedule of construction performance tests (including reference to specification section);
 - (v) Schedule of notifications to the engineer and the department; and
 - (vi) Plan for addressing construction difficulties.
- (E) Change order procedures;
- (F) Maintenance of records;
- (G) Notifications and submittals; and
- (H) Construction progress reports;
- (10) Reservoir filling plan.

- (A) A schedule for the filling of the reservoir specifying the fill rates, water level elevations to be held for observation, and a schedule for inspecting and monitoring the dam;
 - (B) Upon written request by the owner and for good cause shown, the department may temporarily approve storage of water prior to full compliance with the acceptance of construction. Only a partial reservoir filling will be granted and final acceptance of the construction for full use will not be granted until all the construction completion documents have been satisfactorily completed. The written request shall include:
 - (i) A schedule for the filling of the reservoir specifying the fill rates, water level elevations to be held for observation, and a schedule for inspecting and monitoring the dam;
 - (ii) A draft emergency action plan; and
 - (iii) A draft operation and maintenance plan;
- (11) Completed project documentation.
- (A) Submission of required documentation as detailed in section 13-190.1-31;
 - (B) Topographic survey of completed work including all monuments, inverts, crest alignment, spillways, and significant appurtenant features, when required by the department;
- (12) Notifications to the department. The construction engineer shall notify the department of the following:
- (A) The date of the start of construction;
 - (B) Notice for inspection(s). The construction engineer shall give the department at least ten days advance notice of initial materials placement

- on the dam's foundation, in the cutoff trench, outlet backfill, outlet foundation, and any appurtenance requested by the department in the approval of the plan for construction observation, to allow for observation by the department;
- (C) Notice of substantial completion shall be issued by the construction engineer to the department stating that the permitted improvements are functionally complete such that filling of the reservoir can be accomplished;
 - (D) Notice of final inspection. The construction engineer shall give the department fifteen days advance written notice prior to the project's final construction inspection;
 - (E) Notice of start of reservoir filling. The construction engineer shall provide notice at least ten days prior to initiating filling of the reservoir, unless otherwise agreed upon at final inspection. Filling of the reservoir shall not commence until concurrence is received from the department;
- (13) Suspension of construction or revocation of permit.
- (A) Unsafe conditions. If conditions are revealed which will not permit the construction, enlargement, repair, alteration, or removal of a safe dam or reservoir, the application approval for construction, enlargement, repair, alteration, or removal shall be revoked;
 - (B) Violation of application approval. If at any time during construction, enlargement, repair, alteration, or removal of a dam or reservoir the department finds that the work is not being done in accordance with approved

plans and specifications, the department shall give a written notice thereof to the owner.

- (i) The written notice shall state the specific violations or deficiencies and shall order the immediate compliance with the approved plans and specifications;
- (ii) The department may order that no further work be done until compliance has been effected and confirmed by the department or its designated representative;
- (iii) If the owner fails to comply with the department's written notice or the approved plans and specifications, the board shall revoke the application approval and compel the owner to remove the incomplete structure sufficiently to eliminate any safety hazard to life or property. [Eff.

FEB 20 2012] (Auth: HRS
\$179D-6) (Imp: HRS \$179D-6)

§13-190.1-31 Construction completion and acceptance for the construction, enlargement, repair, alteration, or removal of a dam, reservoir, or appurtenant works. Upon completion of the construction for a new, enlarged, repaired, altered, or dam removal project, the following items, as a minimum, shall be addressed and submitted to the department, as applicable to the project:

- (1) The construction engineer's certification that to the best of the engineer's knowledge, information, and belief, the project is complete and was constructed in conformance with the approved plans, specifications, and approved change orders, and all punch list items identified at the

final construction inspection have been resolved, including a description of the actions taken to address the deficiencies;

- (2) Construction completion documents. The following construction documents shall be provided to the department within sixty days of the final construction inspection in order for the project to be deemed complete:
 - (A) Written notification to the department that the project is complete and conforms with the approved plans, specifications, and approved change orders;
 - (B) As constructed, record, or as built drawings that describe the dam or reservoir as actually constructed;
 - (C) A final construction report containing the following information, if applicable: a summary of construction, including problems encountered and solutions implemented to resolve the problems; a summary of construction material tests and geologic observations; photographs of construction from the exposed foundation to completion of construction;
 - (D) Topographic survey of completed work including all monuments, inverts, crest alignment, spillways, and significant appurtenant features as required by the department;
 - (E) A record of the location of permanent monuments and instrumentation as well as installation details and initial surveys and readings, as applicable;
 - (F) A log of the recorded water levels and other readings in the schedule for the first filling of the reservoir and refilling specifying the fill rates, water level elevations to be held for observation, and a schedule for inspecting and monitoring the dam;

- (G) A long-term instrumentation monitoring plan that shall include the frequency of monitoring; the data recording format; graphical presentation of data; and the parties who will perform the work;
- (H) An emergency action plan in a format accepted by the department in accordance with subchapter 5;
- (I) An operation and maintenance manual for the dam and its appurtenant structures developed in accordance with subchapter 5;
- (J) Compliance with subchapter 2;
- (K) An affidavit showing the actual cost of the construction, including all engineering costs;
- (L) An additional fee or refund request based on the actual cost of construction, computed in accordance with subchapter 8;
- (3) Acceptance of construction. Construction for which application approval has been provided shall not be deemed complete nor shall storage of water be permitted until the department furnishes to the owner a written statement of acceptance, unless temporary approval of storage is granted by the department. The acceptance shall specify any limitation upon, or requirements for use of the facility. The department shall furnish the acceptance or denial within sixty days of receipt of satisfactorily completed construction completion documents; and
- (4) A report documenting the filling of the reservoir and identifying the fill rates, water level elevations held, and inspection and monitoring findings. [Eff.

FEB 20 2012] (Auth: HRS §179D-6) (Imp: HRS §179D-6)

§13-190.1-32 Complaints as to unsafe conditions during construction. (a) Upon receipt of a written complaint alleging that the person or property of the complainant is endangered by the construction, enlargement, repairs, alterations, removal, maintenance, or operation of any dam or reservoir, the department shall contact the owner and the department or department representative shall conduct an inspection unless the data, records, and inspection reports on file with the department are sufficiently adequate to determine whether the complaint is valid or invalid.

(b) If an unsafe condition exists, the department shall notify the owner to take action necessary to render the condition safe, including breaching or removal of any dam found beyond repair. If the owner is unavailable or unresponsive, the board may commence action under section 13-190.1-41. [Eff.

FEB 20 2012] (Auth: HRS §179D-6) (Imp: HRS §179D-6)

SUBCHAPTER 5

MAINTENANCE, OPERATION, AND EMERGENCY WORK

§13-190.1-40 Maintenance and operation. (a) Owners shall provide for the adequate and timely maintenance, operation, and inspection of their dams and reservoirs and shall be responsible for any engineering and geologic investigations which may be required to ensure public safety. Owners shall keep available and in good order records of original construction and any modifications, and shall report to the department their maintenance, operation, and engineering activities, including at a minimum, but not limited to, horizontal and vertical controls, seepage measurements, piezometric data collection, and geologic investigations.

(b) The owner of a dam or reservoir shall fully and promptly advise the department of any flood,

incidents, or circumstance which may adversely affect the dam or reservoir.

(c) The department shall make inspections of dams and reservoirs either with its own engineers or by consulting engineers of its selection, not less than once every five years. The department shall require owners to perform at their expense any necessary remedial work and work reasonably required to disclose information sufficient to enable the department to determine conditions of dams and reservoirs in regard to their safety, including the installation, maintenance, and monitoring of instrumentation.

(d) All costs incurred by the department to conduct the inspection may be charged to the owner. The department shall present a bill for the expenses to the owner, and if the owner neglects for ninety days thereafter to pay it, the bill and costs become a lien upon the lands and property of the owner so liable for the payment of the bill, and must be collected as delinquent taxes against the lands and property are collected. All funds collected shall be deposited into the dam and reservoir safety special fund. [Eff. FEB 20 2012] (Auth: HRS §179D-6) (Imp: HRS §179D-30)

§13-190.1-40.1 Operation and maintenance plan.

(a) Owners and operators shall maintain an up-to-date operation and maintenance plan including an inspection and monitoring program with written reports submitted to the department on a yearly basis. The inspection and monitoring program shall contain the actions required to maintain and keep the structure, its appurtenant works, and access in a state of repair and operating condition that would be required by the exercise of due care with regard for the safety of persons or property, using sound and accepted engineering principles, guidelines, and these rules.

(b) An operation and maintenance plan shall include the following:

- (1) Facility information and site map:
 - (A) Dam name;
 - (B) State dam inventory identification number;
 - (C) Owner's name;
 - (D) Stream;
 - (E) Location;
 - (F) Dam type; and
 - (G) Dam height, crest length, and crest width;
- (2) List of responsible parties, name, title, and telephone numbers, for the following:
 - (A) Operation;
 - (B) Maintenance;
 - (C) Inspection; and
 - (D) Monitoring of instrumentation;
- (3) List of hydraulic elements controlling inflow to or outflow reservoir, including gates, valves spillways, stoplogs, structures, etc. and the location and dimensions of structures;
- (4) Rules and procedures for reservoir operation, including how the reservoir level is controlled, proposed reservoir levels for given times of year, periods of drawdown, and filling and operation during floods;
- (5) List of items requiring periodic maintenance, and procedures for performing maintenance, including type of maintenance performed, frequency, method, and record keeping;
- (6) List of instrumentation, frequency of monitoring, and method of record keeping;
- (7) List of equipment to be periodically test operated, including gates, valves, hoists, and frequency of test operations;
- (8) Frequency of routine inspections and monitoring, for example, weekly, monthly, quarterly; and a list of key elements inspected;
- (9) Checklists, logbook, inspection forms for applicable items;

- (10) Copy of the latest inspection report; and
- (11) Appendices for any additional information.
[Eff. FEB 20 2012] (Auth: HRS §179D-6)
(Imp: HRS §179D-6)

§13-190.1-41 Emergency work. (a) Owners and operators of dams and reservoirs have the primary responsibility for determining when an emergency involving a dam or reservoir exists. When the owner or operator of a dam or reservoir suspects an emergency exists, the owner or operator shall immediately implement the emergency action plan required by section 13-190.1-42, and take additional actions necessary to safeguard life, health, and property.

(b) If, in the opinion of the department, conditions of any dam or reservoir are so dangerous to the health and safety of life or property as to not permit time for issuance and enforcement of an order relative to construction, modification, maintenance, or repair of the dam or reservoir, or the dam or reservoir is threatened by any large flood or other natural disaster, the department may immediately employ remedial measures necessary to protect life and property.

(c) The department shall provide coordination and assistance to the proper state or county agency or agencies to maintain control of any dam or reservoir that, pursuant to subsection (b), has been determined to be dangerous to life or property until the dam or reservoir is deemed safe, or until any emergency conditions that precipitated taking control of the dam or reservoir, pursuant to subsection (b), have been abated. The department may determine the proper time at which to relinquish control of the dam or reservoir.

(d) Any necessary and reasonable costs and expenses incurred by the department in fulfilling the duties mandated by subsections (b) and (c) in connection with a remedial or emergency action shall

be recoverable by the department from the owner of any dangerous or threatened dam or reservoir.

(e) Any owner failing or refusing, after written notice has been given, to pay the reasonable costs and expenses incurred by the department, in accordance with subsection (d), shall be, upon complaint by the department to the attorney general, subject to reasonable attorney's fees incurred in the recovery of the costs and expenses.

(f) All moneys collected by the department pursuant to subsection (d) shall be credited to the dam and reservoir safety special fund.

(g) If a condition arises that in the opinion of the department may pose a danger to the health and safety of persons or property and sufficient time permits, the board may issue orders reciting the existence of the condition and require any actions the board deems necessary. Any person to whom an order is directed may challenge the order, but shall immediately comply with the order, pending disposition of the person's challenge. The board shall give precedence to a hearing on the challenge over all other pending matters.

(h) In the case of an emergency where the board or department declares that repairs, breaching of the dam, or other actions, are immediately necessary to safeguard life and property, the department shall initiate remedial action at the owner's expense if the owner fails to act. The department shall be notified at once of any emergency repairs or other work instituted by the owner. [Eff. FEB 20 2012] (Auth: HRS §179D-6); (Imp: HRS §179D-24; HRS §179D-30)

§13-190.1-41.1 Emergency action by department.

(a) In applying the remedial means provided for in this chapter, the department may in an emergency with its own forces, or by other means at its disposal, do any or all of the following:

- (1) Take full charge and control of any dam or reservoir;

- (2) Lower the water level by releasing water from the reservoir;
- (3) Completely or partially drain the reservoir;
- (4) Perform any necessary remedial or protective work at the site; or
- (5) Take such other steps as may be essential to safeguard life and property.

(b) The department shall continue in full charge and control of such dam or reservoir and its appurtenances until they are rendered safe or the emergency occasioning the action has ceased and the owner or operator is able to take back such operations. The department's take over of the dam, the reservoir, or their appurtenances shall not relieve the owner of a dam or reservoir of legal liability to the department or third parties for those circumstances which caused an emergency situation. The department's assumption of control over the dam shall not constitute a taking and the department shall not be liable to the dam owner or others for diminution in value that may be caused by the department's work.
[Eff. FEB 20 2012] (Auth: HRS §179D-6) (Imp: HRS §179D-24)

§13-190.1-42 Emergency action plan. (a) Owners of high and significant hazard dams shall prepare, maintain, and implement an emergency action plan for each dam or reservoir for immediate defensive action to alert and evacuate the affected population and to mitigate damages to property.

(b) The emergency action plan shall be submitted to the department.

(c) The emergency action plan shall contain at a minimum the following:

- (1) Guidance for determining emergency event levels;
- (2) A notification procedure for informing the department and local emergency response agencies;
- (3) An anticipated evacuation area;

- (4) Listing of official emergency action governmental plan holders;
 - (5) Directions to the facility;
 - (6) A location map and site map; and
 - (7) Testing, training, and updated information for the plan.
- (d) The owner shall submit a copy of the emergency action plan to the emergency response agencies in the appropriate county and other parties involved in the plan for review.
- (e) The owner of a dam or reservoir shall be responsible for the production, distribution, maintenance, and testing of the emergency action plan with all governmental plan holders. [Eff.
- FEB 20 2012] (Auth: HRS §179D-6) (Imp: HRS §179D-30)

SUBCHAPTER 6

REMEDIES

§13-190.1-43 Liens. (a) Costs of construction, enlargement, repair, alteration, or removal work done by the department or its agents to render a dam, reservoir, or appurtenances safe shall constitute a statutory lien against all property of the owner. Notwithstanding any other law to the contrary, the lien shall be considered prior and superior to all other mortgages, liens, or encumbrances of record even if those other mortgages, liens, or encumbrances were filed before the lien pursuant to this subsection becomes due.

(b) Liens pursuant to subsection (a) may be perfected and foreclosed in advance of or after completion of construction, enlargement, repair, alteration, or removal. If perfected in advance, the lien shall be perfected by the filing of an affidavit of the board setting forth the estimate of the costs of construction, enlargement, repair, alteration, or removal within the county in which the dam or reservoir is located in the same manner as prescribed

for mechanic's liens. When the affidavit is filed, the amount set forth in the affidavit shall be a lien in that amount against all property of the owner. If the actual cost of construction, enlargement, repair, alteration, or removal exceeds the estimated cost, the board may amend the affidavit setting forth the additional estimated cost. If the estimated cost exceeds the actual costs of construction, enlargement, repair, alteration, or removal at completion, the board shall file an amended affidavit at completion. If a lien is perfected in advance and the construction, enlargement, repair, alteration, or removal is not commenced within two years from the date of perfection, the lien shall be void. The board shall file a satisfaction of lien upon payment of the costs of construction, enlargement, repair, alteration, or removal by the owner. [Eff.

FEB 20 2012] (Auth: HRS §179D-6) (Imp: HRS §179D-26)

§13-190.1-44 Injunctive relief. Whenever in the judgment of the department any person has engaged in or is about to engage in any act or practice that constitutes or will constitute an unlawful action under chapter 179D, HRS, the department may apply to the circuit court of the county in which the unlawful act or practice has been or is about to be engaged in, or in which jurisdiction is appropriate, for an order enjoining the act or practice, or for an order requiring compliance with this chapter. Upon a showing by the department that a person has engaged in or is about to engage in any unlawful act or practice, a permanent or temporary injunction, restraining order, or other order shall be granted without the necessity of showing lack of an adequate remedy at law. [Eff. FEB 20 2012] (Auth: HRS §179D-6) (Imp: HRS §179D-23)

§13-190.1-45 Department action when multiple owners cannot mutually agree. If multiple owners of a dam or reservoir facility cannot mutually agree on a unified course of action for repair or remediation of a dam facility, the department shall issue and enforce actions to ensure public safety. Costs incurred may be recoverable by the department from the owners. [Eff. FEB 20 2012] (Auth: HRS §179D-6) (Imp: HRS §179D-23)

SUBCHAPTER 7

ENTRY UPON PROPERTY

§13-190.1-46 Entry upon property. (a) The department shall have the right to direct and conduct investigations as it may reasonably deem necessary, to carry out its duties as prescribed by statute. For this purpose, the agents or employees of the department or any authorized representatives may enter at reasonable times, without prior notice, any property, public or private, for the purpose of investigating the condition, construction, or operation of any dam, reservoir, or other artificial barrier dealt with in chapter 179D, HRS. If an emergency situation arises as determined by the department, the agents or employees of the department, or any authorized representatives, shall have the right to enter without prior notice, any property, public or private, for the purpose of investigating the condition, construction, or operation of the dam and to take any emergency remedial actions, without a search warrant or liability for trespass.

(b) It shall be unlawful for any person to refuse entry or access to any authorized representative of the department who requests entry for purposes of inspection and who presents appropriate credentials. It shall also be unlawful to obstruct, hamper, or interfere with any representative while in the process of carrying out the representative's official duties.

(c) Notwithstanding any other provision of law to the contrary, the board and its agents, engineers, other employees, or authorized representatives, for the purposes of enforcing chapter 179D, HRS, may enter upon any land or water in the State that is the subject of an inspection, investigation, or remedial actions without a search warrant or liability for trespass. [Eff. FEB 20 2012] (Auth: HRS §179D-6) (Imp: HRS §179D-22)

SUBCHAPTER 8

FEES

§13-190.1-50 Dam permit application fees for construction, repair, alteration, or removal. (a) The applicant or owner shall submit with the application for construction, enlargement, alteration, repair, or removal of a dam or reservoir, an application fee in the amount equal to two per cent of the estimated cost of construction, including engineering costs.

(b) For the purposes of this subchapter, the estimated cost of the construction, enlargement, alteration, repair, or removal shall include the following:

- (1) The cost of all labor and materials entering into the construction of the dam and appurtenant works or reservoir;
- (2) The cost of preliminary investigations and surveys;
- (3) The cost of the construction plans properly chargeable to the cost of the dam or reservoir; and
- (4) Any and all other items entering directly into the cost of the construction, enlargement, alteration, repair, or removal.

(c) The costs of right-of-way, detached powerhouses, electrical generating machinery, and roads and railroads affording access to the dam or

reservoir shall not be included among the items used in the determination of cost.

(d) An application shall not be considered by the department until the application fee is received.

(e) In the event the actual cost exceeds the estimated cost by more than fifteen per cent, a further fee shall be required by the board before final approval and shall be two per cent of the amount the actual cost exceeded the estimated cost of the construction, enlargement, alteration, repair, or removal. No further fee shall be required, if such fee is to be computed at less than twenty dollars. [Eff.

FEB 20 2012] (Auth: HRS §179D-6) (Imp: HRS §179D-6)

§13-190.1-51 Certificate of approval to impound fee. The owner shall submit with the application for a certificate of approval to impound payment of a fee in the amount of four hundred dollars. [Eff.

FEB 20 2012] (Auth: HRS §179D-6) (Imp: HRS §179D-6)

§13-190.1-52 Annual fees. (a) An annual fee shall be paid by the owner of the dam, on or before December 31 of each year, for the following calendar year, based upon a fixed rate and height of the dam. The annual fee shall be five hundred dollars per dam, plus one hundred ten dollars per foot of height.

(b) Any owner who fails to pay any annual fee or any part of any annual fee required to be paid within the time required shall pay a penalty of ten per cent of the annual fee or part of the annual fee, plus interest at the rate of one-half of one per cent per month, or for each fraction of a month, from the date on which the annual fee or the part of the annual fee became due and payable to the department until the date of payment.


(c) For the purposes of this section, "height of the dam" means the vertical distance, to the nearest foot, from the natural bed of the stream or

watercourse at the downstream toe of the barrier, as determined by the department, or from the lowest elevation of the outside limit of the barrier, as determined by the department, if it is not across a stream channel or watercourse, to the maximum water storage elevation. [Eff. FEB 20 2012] (Auth: HRS §179D-6) (Imp: HRS §179D-6)

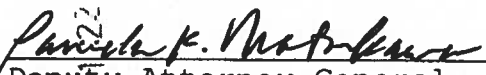
DEPARTMENT OF LAND AND NATURAL RESOURCES

The repeal of Chapter 13-190 and the adoption of Chapter 13-190.1, Hawaii Administrative Rules, on the Summary Page dated November 22, 2010, were adopted on November 22, 2010, following public hearings held on Kauai on October 12, 2010; on Oahu on October 13, 2010; on Maui on October 14, 2010; and on Hawaii on October 15, 2010; and after public notice was given in the Honolulu Star Advertiser on September 10, 17, & 24, 2010 and on October 1, 2010, Hawaii Tribune Herald on October 1 & 8, 2010, and Maui News and Kauai News on September 27, 2010 and on October 6, 2010.

The repeal of chapter 13-190 and the adoption of chapter 13-190.1, Hawaii Administrative Rules, shall take effect ten days after filing with the Office of the Lieutenant Governor.


WILLIAM J. AILA, JR., Chairperson
Board of Land and Natural Resources

APPROVED AS TO FORM:

12 FEB 29 '12
OFFICE OF THE LIEUTENANT GOVERNOR

Pamela K. Matsumura
Deputy Attorney General

Date: 12/5/11

APPROVED:


NEIL ABERCROMBIE, Governor
State of Hawaii

2-8-12
Date

Date Filed

